

L a t h r o p

# Existing Conditions Report

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CITY OF LATHROP // GENERAL PLAN UPDATE



# CITY OF LATHROP

## GENERAL PLAN UPDATE



CITY OF LATHROP GENERAL PLAN EXISTING CONDITIONS REPORT

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## **INTRODUCTION**

The City of Lathrop General Plan identifies the community’s vision for the future and provides a framework to guide decisions on growth, development, and conservation of open space and resources in a manner consistent with the quality of life desired by residents, businesses, and local elected officials.

This Existing Conditions Report prepared for the General Plan Update provides an overview of Lathrop’s physical, environmental, economic, and demographic setting, as of Late-2017.

City of Lathrop staff, the General Plan Update consultant (De Novo Planning Group), and its subconsultants have worked together to ensure that this is an accurate and reliable source of information. This document is intended to serve as a comprehensive reference for community members, policymakers, staff, the City’s General Plan Steering Committee, and the consultant team throughout the General Plan Update process.

The City of Lathrop’s General Plan Update is a multi-year process that will include a comprehensive update of the General Plan, which sets a vision for the future of the city, goals and strategies to achieve the City’s vision, and an Environmental Impact Report (EIR), which investigates the possible impacts of the General Plan Update policy changes to the surrounding physical environment. This Existing Conditions Report document provides information about these components and establishes the existing setting for the EIR.

This chapter provides a brief background summary of the City of Lathrop, summarizes the contents of this Existing Conditions Report, and provides an overview of the General Plan Update.

## **BACKGROUND**

The City of Lathrop is located in Northern San Joaquin Valley of California east and west of the San Joaquin River. Interstate 5 (I-5), Interstate 205 (I-205) and State Route 120 (SR 120) intersect within the City. Lathrop was incorporated in 1989 and adopted its current General Plan in 1991; the Lathrop General Plan has been amended several times since adoption, but has not been comprehensively updated.

For much of the 20th century, the Lathrop area has been predominantly an agricultural region due to the excellent soil, mild climate, and access to clean water. While agriculture still plays an important role in the region, the City’s economic base has become more diversified with the development of industries and the influx of Bay Area workers seeking affordable housing. Lathrop is centrally located within a 30-minute commute of Tracy, Manteca, Stockton, Lodi, Modesto, Livermore and Pleasanton. Lathrop is also located within a 60-minute commute to larger employment centers of Sacramento, San Jose/Santa Clara County and Oakland/Alameda County. Lathrop’s population as of 2017 was 23,110, and the city is one of Northern California’s fastest growing communities.

## **EXISTING CONDITIONS REPORT CONTENTS**

To prepare a meaningful General Plan, existing conditions must be understood and documented. The Existing Conditions Report identifies development patterns, natural resources, socioeconomic conditions, and environmental constraints in the city and identifies the regulatory environment for each topic. This report will be a resource for the City Council, Planning Commission, General Plan Steering Committee, City staff, and the De Novo Planning Group team for the General Plan Update and EIR. The Existing Conditions

Report makes extensive use of maps, graphics, and user-friendly non-technical terms to help make it accessible to the general public.

The Existing Conditions Report provides background data and will serve as a technical framework, while the General Plan will focus on goals, policies, and implementation actions. The information collected for the Existing Conditions Report will also be used as the basis for the “existing setting” sections of the General Plan EIR.

The following topic areas are addressed in the Existing Conditions Report:

### 1.0 LAND USE AND SOCIOECONOMICS

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The Land Use and Socioeconomics chapter addresses land use and demographics, including issues related to land use patterns and community character, economic development, and fiscal conditions. The information in this chapter provides both an historical and current perspective on land use and is intended to assist the General Plan Update process by providing both historical context and a baseline of existing land use information to be used when formulating and considering amendments to the city’s current land use pattern or when considering alternate growth and land use scenarios for the city.

The economic development and fiscal section contains information about employment characteristics, sales and spending, and the existing fiscal conditions in the City of Lathrop, including General Fund operating revenue sources and operating expenditures.

The objective is to provide General Plan update participants, including the public, with a common understanding of how the City of Lathrop spends its General Fund monies at present, how those monies are generated, and the implications for planning for development in the City of Lathrop over the next 20 to 25 years. Considering these factors as part of the General Plan Update process will help to ensure that the City maintains a fiscally sustainable budget in addition to high quality services for residents and businesses as the community grows. This section focuses on the revenues and expenditures that comprise the City’s General Fund, as this is the part of the overall City Budget that receives the City’s most important discretionary revenues, and which funds critical public services, such as public safety, parks, and community services.

### 2.0 CIRCULATION

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The Circulation chapter describes the circulation network serving the city. Existing conditions are described for roadway operations, pedestrian-bicycle facilities, transit service, and multimodal operations. This chapter includes a review of relevant transportation planning documents affecting the Lathrop area, including the current General Plan Circulation Element, Lathrop’s current Capital Improvement Program (CIP), and the 2014-2040 Regional Transportation Plan/Sustainable Communities Strategy. Federal, State, regional, and local regulations pertaining to traffic and circulation in Lathrop are also described.

### 3.0 COMMUNITY SERVICES AND UTILITIES

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The Community Services and Utilities chapter describes the existing conditions and regulatory context regarding community services, including water, wastewater, drainage and flood control, education, public safety services, schools, and parks and recreational resources within the city. These facilities and services provide a framework that supports growth and development in the city. This chapter describes existing service levels, available resources, and planned expansion of services and infrastructure.

## 4.0 HAZARDS, SAFETY, AND NOISE

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The Hazards, Safety, and Noise chapter includes a listing of key significant issues that will ultimately guide the preparation of the Safety and Noise Elements of the General Plan. This chapter provides a summary of the existing setting and conditions associated with natural and man-made hazards that may pose a danger to city residents, employees, and visitors including: dangers from hazardous materials including hazardous materials sites (i.e., landfills, superfund sites, pipelines and sites with the potential for chemical explosion); fire hazards; emergency response; aircraft hazards; and major inclement weather conditions. Known hazardous conditions listed in available State and County databases are also described.

The noise section includes descriptions of the characteristics of sound and noise and a description of transportation, stationary, and construction noise sources within the City's Planning Area. A description of the noise monitoring survey results, tabularized noise exposure contours, and an existing conditions description that explains local traffic and stationary noise sources are included. This section also summarizes current information on ground vibration thresholds and summarizes the existing vibration environment.

Noise measurement locations were selected to quantify noise levels along major thoroughfares, near significant stationary noise sources, in developing areas, and in other areas that may be problematic. Based on the results of the noise monitoring and the traffic data, noise contours associated with major roadways have been quantified and tabulated, using the U.S. Federal Highway Traffic Noise Prediction Model. Noise levels associated with stationary and railroad sources were identified in tabular format, and background noise levels within the community are quantified. A summary of the regulatory framework related to noise, including Federal, State, and City laws, ordinances, plans, policies, and standards is also provided.

## 5.0 CONSERVATION AND NATURAL RESOURCES

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The Conservation and Natural Resources chapter discusses conservation issues related to cultural and historic preservation, air quality, greenhouse gases, biological resources, geologic and mineral resources, hydrology and water quality, and visual resources in and around the city. This chapter also discusses open space as it relates to the preservation of natural resources as part of the biological resources discussion, the managed production of surface water and groundwater resources as part of the hydrology discussion. Federal, State, and local regulations that pertain to each of these topics are also described.

## 6.0 ENVIRONMENTAL JUSTICE

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The Environmental Justice chapter analyzes Disadvantaged Communities (DACs) within the Planning Area, and addresses a wide range of topics related to Environmental Justice issue areas in order to meet the requirements of SB 1000. Environmental Justice topics addressed in this chapter include:

- Pollution Exposure and Air Quality
- Public Facilities
- Food Access
- Safe and Sanitary Homes
- Physical Activity
- "Civil" or Community Engagement
- Improvements and Programs (that address the needs of Disadvantaged Communities)

## GENERAL PLAN OVERVIEW

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State law requires every city and county in California to prepare and maintain a planning document called a general plan. A general plan is a “constitution” or “blueprint” for the future physical development of a county or city. All future planning decisions and project approvals must be consistent with the general plan, including, but not limited to: specific plans, subdivisions, public works projects, and zoning decisions.

A general plan has four defining features:

- **General.** As the name implies, a general plan provides general guidance for future land use, transportation, infrastructure, environmental, and resource decisions.
- **Comprehensive.** A general plan covers a wide range of social, economic, infrastructure, and natural resource issues. The Lathrop General Plan Update will include goals, policies and implementation programs to address: land use, housing, community design, growth management, economic development, infrastructure, community facilities, circulation, conservation and open space, safety, noise, and fiscal sustainability. The Lathrop General Plan is proposed to include the following elements:
  1. Land Use and Community Character
  2. Housing (*no changes to the adopted 2015 housing element*)
  3. Circulation
  4. Noise
  5. Safety
  6. Conservation and Open Space
  7. Economic Development
  8. Public Services and Facilities
  9. Air Quality and Climate Change
  10. Community Health and Wellness
  11. Administration and Implementation
- **Long-Range.** A general plan provides guidance on achieving a long-range vision of the future for a city or county. To reach this envisioned future, the general plan includes goals, policies, and implementation programs that address both near-term and long-term needs. The City of Lathrop’s General Plan Update will look ahead approximately 20 years, to the year 2040.
- **Integrated and Coherent.** The goals, policies, and implementation programs in a general plan must present a comprehensive, unified program for development and resource conservation. A general plan uses a consistent set of assumptions and projections to assess future demands for housing, employment, public services, and infrastructure. A general plan has a coherent set of policies and implementation programs that enables citizens to understand the vision of the general plan, and enables landowners, businesses, and industry to be more certain about how future planning decisions will be made and implemented.

## USING THE GENERAL PLAN

The General Plan is used by the City Council, Planning Commission, and City staff on a regular basis to make decisions with direct and indirect land use implications. It also provides a framework for inter-jurisdictional coordination of planning efforts among officials and staff of the City and other government agencies such as the County and State and Federal agencies.

The General Plan is the basis for a variety of regulatory mechanisms and administrative procedures. California planning law requires consistency between the General Plan and its implementation programs. Implementation programs and regulatory systems of the General Plan include zoning and subdivision ordinances, capital improvement programs, specific plans, environmental impact procedures, and building and housing codes.

Over time, the city's population will change, its goals will be redefined, and the physical environment in which its residents live and work will be altered. In order for the General Plan to be a useful document, it must be monitored and periodically revised to respond to and reflect changing conditions and needs.

The City's General Plan should also be user-friendly. To this end, the Lathrop General Plan Update will be divided into two primary documents: the Existing Conditions Report and the Goals and Policies Report.

As described above, this Existing Conditions Report provides a summary of a range of conditions in Lathrop as they exist in late-2017-early 2018, and provides the baseline framework for the development of the General Plan Update's goals, policies, and implementation programs.

The Goals and Policies document, which will be developed in coordination with City staff, decision-makers, and the General Plan Steering Committee, is the essence of the General Plan. It contains the goals and policies that will guide future decisions within the city. It also identifies a full set of implementation programs that will ensure the goals and policies in the General Plan are carried out.

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### 1.0 LAND USE AND SOCIOECONOMICS

This chapter examines the land use and development patterns in Lathrop, the city’s demographics and housing profile, economic characteristics, and fiscal conditions. The information and analysis is intended to inform the General Plan Update process by providing both historical context and a baseline of existing land use, demographic, and housing development information. This chapter includes the following sections:

- 1.1 Land Use
- 1.2 Population, Housing, and Demographics
- 1.3 Economic Trends
- 1.4 Real Estate Trends and Market Demand
- 1.5 Fiscal Conditions
- 1.6 Projections (Population, Household, Housing Units, and Employment)

### 1.1 LAND USE

This section describes land use and development patterns in Lathrop and identifies the regulatory framework associated with land use. Existing land use conditions, including land uses by General Plan designation and assessed land uses, are described. This chapter provides an overview of existing land use patterns, types and location of development in the city, and surrounding area land uses.

#### KEY TERMS

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**City Limits:** The city limits include the area within the City’s corporate boundary, over which the City exercises land use authority and provides public services.

**Sphere of Influence:** A Sphere of Influence (SOI) is the probable physical boundary and service area of a local agency, as adopted by a Local Agency Formation Commission (LAFCO). An SOI includes both incorporated and unincorporated areas within which a city or special district will have primary responsibility for the provision of public facilities and services.

**Area of Interest:** The Area of Interest (AOI) includes approximately 2,055 acres of land in the northwest portion of the Planning Area north of the city limits and SOI. This area had previously been included within the SOI and was subsequently removed during the 2016 Municipal Services Review Sphere Amendment.

**Planning Area:** For the purposes of the Lathrop General Plan Update, the Planning Area is defined as all lands within the city limits, SOI, and AOI.

Figure 1.1-1 shows the Lathrop City Limits, the adopted SOI, and the General Plan Planning Area.

#### REGULATORY FRAMEWORK

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The regulatory framework discussion describes laws and regulations that guide land use decisions. Adopted plans that pertain to the City are also described.

### *STATE*

#### **California General Plan Law**

Government Code Section 65300 requires that each county and city adopt a General Plan “for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning.”

The General Plan is a comprehensive long-term plan for the physical development of the county or city and is considered a "blueprint" for development. The General Plan provides a statement of the community’s development, economic, circulation, and environmental goals and includes diagrams and text setting forth objectives, standards, policies, and programs. The General Plan must contain seven State-mandated elements: Land Use, Open Space, Conservation, Housing, Circulation, Noise, and Safety. It may also contain any other elements that the City wishes to include. The land use element designates the general location and intensity of designated land uses to accommodate housing, business, industry, open space, education, public buildings and grounds, recreation areas, and other land uses.

The 2003 General Plan Guidelines, established by the Governor’s Office of Planning and Research (OPR) to assist local agencies in the preparation of their general plans, further describe the mandatory land use element as a guide to planners, the general public, and decision makers prescribing the ultimate pattern of development for the city. The Governor’s Office of Planning and Research (OPR) has been engaged in a multi-year process to update the State General Plan Guidelines. The new General Plan Guidelines will include resources, data, tools, and model policies to help cities and counties update their general plans. Draft General Plan Guidelines are currently being circulated for comment, and it is expected that the updated Guidelines will be adopted during Lathrop’s General Plan update process.

#### **California Environmental Quality Act**

The California Environmental Quality Act (CEQA) was developed to protect the quality of the environment and the health and safety of persons from adverse environmental effects. Discretionary projects are required to be reviewed consistent with the requirements of CEQA to determine if there is potential for the project to cause a significant adverse effect on the environment. Depending on the type of project and its potential effects, technical traffic, noise, air quality, biological resources, and geotechnical reports may be needed. If potential adverse effects can be mitigated, a mitigated negative declaration is required. If potentially adverse effects cannot be mitigated, an environmental impact report is required. These documents have mandated content requirements and public review times. Preparation of CEQA documents can be costly and, despite maximum time limits set forth in the Public Resources Code, can extend the processing time of a project by a year or longer.

#### **Subdivision Code**

A subdivision is any division of land for the purpose of sale, lease or finance. The State of California Subdivision Map Act (Government Code § 66410) regulates subdivisions throughout the state. The goals of the Subdivision Map Act are as follows:

- To encourage orderly community development by providing for the regulation and control of the design and improvement of a subdivision with proper consideration of its relationship to adjoining areas.
- To ensure that areas within the subdivision that are dedicated for public purposes will be properly improved by the subdivider so that they will not become an undue burden on the community.
- To protect the public and individual transferees from fraud and exploitation.



The Map Act allows cities some flexibility in the processing of subdivisions. Lathrop controls this process through the subdivision regulations in the Municipal Code (Title 16 - SUBDIVISIONS). These regulations ensure that minimum requirements are adopted for the protection of the public health, safety and welfare; and that the subdivision includes adequate community improvements, municipal services and other public facilities. Lathrop’s subdivision provisions support the Subdivision Map Act and, in so doing, also support implementation of the City’s General Plan.

*LOCAL*

**City of Lathrop General Plan**

Lathrop’s current General Plan was last comprehensively updated in 1991, with amendments in 1992, 1997, 2001, 2003, 2004, 2006, 2010, 2011, 2013, 2015, 2016, and 2018. An update to the Housing Element was completed in 2001 and again in 2015. Land uses in Lathrop have been developed based on the Land Use Map, and goals and policies established by the City’s General Plan. The City’s General Plan includes a broad goal policy framework that guides land use and planning decisions within the city. The land use element is included in the Lathrop General Plan Part IV (Section A) of the Community Development Element.

Planned land uses within the City include low, medium and high density residential, office, retail, industrial, commercial and conservation land and open space which are included within one of the specific planning areas identified by the City’s Land Use Map. Figure 1.1-1 (General Plan Land Use Map) illustrates the City’s current General Plan Land Use Designations and their respective distributions throughout the Planning Area.

Table 1.1-1 summarizes the City’s General Plan land use designations for areas within the City limits, Sphere of Influence, and Planning Area by acreage. Land use designations on the adopted General Plan Land Use Map, are shown on Figure 1.1-1.

**TABLE 1.1-1: EXISTING CITY OF LATHROP LAND USE DESIGNATIONS**

<i>LAND USE</i>	<i>CITY LIMITS</i>	<i>SOI</i>	<i>AREA OF INTEREST</i>	<i>TOTAL PLANNING AREA</i>
	<i>ACREAGE</i>	<i>ACREAGE</i>	<i>ACREAGE</i>	<i>ACREAGE</i>
<b>AOI - Area of Interest</b>			<b>2,055</b>	<b>2,055</b>
AOI-Area of Interest: AOI-Area of Interest			2,055	2,055
<b>City Proper</b>	<b>4,561.74</b>	<b>119.82</b>		<b>4,681.55</b>
CC: Community Commercial	59.36			59.36
CP: Community Park	35.59			35.59
ES: Elementary School	26.37			26.37
FC: Freeway Commercial	132.01	54.19		186.20
FS: Fire Station	8.20			8.20
GI: General Industrial	1,069.11			1,069.11
HD: High Density Residential	9.32			9.32
LD: Low Density Residential	894.70			894.70
LI: Limited Industrial	1,414.27	65.63		1,479.90
MD: Medium Density	177.48			177.48
NC: Neighborhood Commercial	29.74			29.74
NP: Neighborhood Park	43.66			43.66

## 1.0 LAND USE AND SOCIOECONOMICS

LAND USE	CITY LIMITS	SOI	AREA OF INTEREST	TOTAL PLANNING AREA
	ACREAGE	ACREAGE	ACREAGE	ACREAGE
OS: Open Space	56.51			56.51
P: Public	79.94			79.94
PO: Post Office	15.97			15.97
RecR: Recreational Residential	54.13			54.13
ROW: ROW	5.35			5.35
SC: Service Commercial:	186.51			186.51
UP RR: UP RR	246.29			246.29
VC: Village Center	17.23			17.23
<b>CL - Central Lathrop</b>	<b>1,402.97</b>			<b>1,402.97</b>
CP-CL: Community Park	84.30			84.30
HR-CL: High Density Residential	77.43			77.43
K-8-CL: Elementary School	37.46			37.46
NC-CL: Neighborhood Commercial	12.02			12.02
NP-CL: Neighborhood Park	46.54			46.54
OC-CL: Office Commercial	226.24			226.24
OS-CL: Open Space	48.13			48.13
P-SP-CL: Public/Semi-Public	11.26			11.26
R/MU-CL: Residential/Mixed Use	44.88			44.88
ROW-CL: ROW	9.08			9.08
SPC-CL: Speciality Commercial	7.82			7.82
VR/K-8/DS-CL: Elementary School	18.04			18.04
VR-CL: Variable Density Residential	714.13			714.13
WWTP-CL: Wastewater Treatment Plant	65.64			65.64
<b>LG - Lathrop Gateway</b>	<b>303.70</b>	<b>62.81</b>		<b>366.51</b>
CO-LG: Commercial Office	68.59			68.59
LI-LG: Limited Industrial	189.06			189.06
SC-LG: Service Commercial: Lathrop Gateway	36.85	55.72		92.57
UP RR-LG: UP RR	9.20	7.09		16.29
<b>RI - River Islands</b>	<b>4,521.73</b>			<b>4,521.73</b>
MU-RI: Mixed Use Town Center	164.92			164.92
NC-RI: Neighborhood Retail	23.38			23.38
RCO-RI: Resource Conservation	667.25			667.25
RGC-RI: Regional Commercial	500.23			500.23
RH-RI: Residential High	34.37			34.37
RL-RI: Residential Low	2,910.69			2,910.69
RM-RI: Residential Medium	220.87			220.87
ROW-RI: ROW	0.01			0.01
<b>SL - South Lathrop Specific Plan</b>	<b>318.07</b>			<b>318.07</b>
CO-SL: Commercial Office	13.00			13.00
LI-SL: Limited Industrial	263.48			263.48
OS-SL: Open Space River/Levee Park	16.20			16.20

LAND USE	CITY LIMITS	SOI	AREA OF INTEREST	TOTAL PLANNING AREA
	ACREAGE	ACREAGE	ACREAGE	ACREAGE
P/QP-SL: Public/Quasi Public Facilities	10.27			10.27
UP RR-SL: UP RR	15.12			15.12
<b>ST - Stewart Tract</b>	<b>743.76</b>		<b>431.61</b>	<b>1,175.36</b>
RCO-ST: Resource Conservation	184.06			184.06
RC-ST: Recreation Commercial	81.79		272.71	354.49
RR-ST: Recreation Residential			145.35	145.35
R-ST: Residential	12.40			12.40
UP RR-ST: UP RR	45.28		13.54	58.82
UR-ST: Urban Reserve	420.24			420.24
<b>Grand Total</b>	<b>11,851.97</b>	<b>182.62</b>	<b>2,486.60</b>	<b>14,521.20</b>

SOURCES: SAN JOAQUIN COUNTY, 2017; CITY OF LATHROP GIS LAND USE DATA FILE 2017; DE NOVO PLANNING GROUP, 2018.

### Special Planning Areas

Lathrop has several major land use plans, and special planning areas that oversee the development of their respective planning areas. These plans act as tools for implementing the goals and policies of the General Plan through the regulation of use, density, height and other design standards to achieve the overall vision for the selected area. Several areas of the city are unique in ways that require special consideration. These Special Planning Areas include land use and development policies specific to these areas. Figure 1.1-5 displays special planning areas within the city. Special Planning Areas within Lathrop include the following areas with descriptions provided below:

#### LATHROP GATEWAY SPECIFIC PLAN

The Lathrop Gateway Specific Plan (adopted May 16, 2011) is located south of Vierra Road and Yosemite Avenue, between two Union Pacific Railroad tracks that pass through southern Lathrop, east of the I-5 freeway and north of SR-120. The Specific Plan encompasses approximately 384 gross acres consisting of 168 acres of limited industrial uses and approximately 77 acres in roads and public facility sites. The remaining 57 acres of commercial office and 83 acres of service commercial uses remain outside of the City limits and was not annexed as part of this Specific Plan. Since adoption of the Specific Plan, this area remains largely undeveloped.

As shown in Table 1.1-2, existing assessed development in the Lathrop Gateway Specific Plan Area includes 43 residential units, and 164,783 square feet of commercial and industrial development.

**TABLE 1.1-2: GATEWAY SPECIFIC PLAN - EXISTING ASSESSED DEVELOPMENT**

PLAN AREA	APN COUNT	ACRES (GIS)	RESIDENTIAL UNITS	NON-RESIDENTIAL SQ FT
Lathrop Gateway SP	85	367.61	43	164,783

SOURCE: SAN JOAQUIN COUNTY ASSESSOR'S OFFICE, 2017; DE NOVO PLANNING GROUP, 2018.

#### SOUTH LATHROP SPECIFIC PLAN

The South Lathrop Specific Plan (SLSP) (adopted July 20, 2015), is located east of the I-5 freeway and south of SR-120.

## 1.0 LAND USE AND SOCIOECONOMICS

The SLSP Plan Area includes three distinct land use designations, Office Commercial, Limited Industrial and Open Space. The Land Use Plan proposes approximately 222 acres of limited industrial, 10 acres of commercial office, approximately 31.5 acres of open space and 36 acres of related public facilities.

- The Commercial Office land use encompasses 10 acres of the South Lathrop Specific Plan Area and can accommodate an estimated maximum of 130,680 square feet of gross leasable space.
- The Limited Industrial use comprises 222 acres and can accommodate up to an estimated maximum of approximately 4,158,238 square feet of gross leasable space

Since adoption of the Specific Plan, this area remained largely undeveloped; however, recent activity to amend the specific plan to increase the developable square footage from approximately 4.3 to 4.85 million sq. ft.; approval of a site plan for 4 buildings in addition to the previously approved 6 buildings from 2016; finalization and recording of a parcel map and subsequent permitting and commencement of construction of offsite improvements and utilities infrastructure; and the construction of an approximately 1.2 million sq. ft. warehouse building has started the buildout of this area.

As shown in Table 1.1-3, existing assessed development in the South Lathrop Specific Plan Area includes one residential unit, and 59,124 square feet of commercial and industrial development.

**TABLE 1.1-3: SOUTH LATHROP SPECIFIC PLAN - EXISTING ASSESSED DEVELOPMENT**

PLAN AREA	APN COUNT	ACRES (GIS)	RESIDENTIAL UNITS	NON-RESIDENTIAL SQ FT
South Lathrop SP	18	318.07	1	59,124

SOURCE: SAN JOAQUIN COUNTY ASSESSOR'S OFFICE, 2017; DE NOVO PLANNING GROUP, 2018.

### CENTRAL LATHROP SPECIFIC PLAN

The Central Lathrop Specific Plan (CLSP) area is comprised of approximately 1,520 acres located west of the I-5 freeway, north of the West Lathrop Specific Plan area, and east of the San Joaquin River. The Central Lathrop Specific Plan envisions a vibrant and livable community that offers a balanced mix of residential neighborhoods; retail, office, service-related and other employment generating land uses; and public/semi-public uses such as schools, parks, and other civic oriented facilities. Approximately 6,800 dwelling units and 5 million square feet of office and retail uses are planned for the area. The Central Lathrop Specific Plan project obtained City Council and Planning Commission entitlements in November 2004. The plan area was annexed into the City in September 2005. Since adoption of the Specific Plan, major infrastructure has been constructed, but this area remains largely undeveloped.

As shown in Table 1.1-4, existing assessed development in the Central Lathrop Specific Plan Area includes 8 residential units, a high school and 90,537 square feet of industrial development that is generally comprised of industrial agricultural support structures and uses.

**TABLE 1.1-4: CENTRAL LATHROP SPECIFIC PLAN - EXISTING ASSESSED DEVELOPMENT LATHROP**

PLAN AREA	APN COUNT	ACRES (GIS)	RESIDENTIAL UNITS	NON-RESIDENTIAL SQ FT
Central Lathrop SP	98	1,402.97	8	90,537

SOURCE: SAN JOAQUIN COUNTY ASSESSOR'S OFFICE, 2017; DE NOVO PLANNING GROUP, 2018.

*WEST LATHROP SPECIFIC PLAN*

Originally adopted in 1996, the West Lathrop Specific Plan Area forms the southwestern portion of the City of Lathrop’s Planning Area. The West Lathrop Specific Plan Area is comprised of two large areas: Stewart Tract (made up of River Islands and Southeast Stewart Tract totaling 5,974 acres) and Mossdale Village (1,611 acres). Since the Specific Plans adoption, several planning documents have been adopted within the specific plan’s planning area to further guide development including the Mossdale Village urban design concepts, and the River Island project.

**Mossdale Village Urban Design Concepts**

Located west of I-5 and east of the San Joaquin River within the West Lathrop Specific Plan Area is Mossdale Village project area that includes design concepts for a 1,161-acre residential development with an associated village center, service commercial and highway commercial uses. The village as a whole aims to be organized around a pedestrian-oriented village center. A variety of shops, restaurants and personal and professional services as well as indoor and outdoor gathering places will create a lively village center for community life. In addition, the residents of Mossdale Village will share a system of trails stemming from a broad open space corridor along the site’s westerly San Joaquin River edge. The Mossdale Village is divided into three (3) separate planning areas: Mossdale Landing; Mossdale Landing East; and Mossdale Landing South. Mossdale Landing South was approved September 2004 –and Mossdale Landing East was approved February 2004.

**Mossdale Landing**

Located west of I-5 and south of the Central Lathrop Specific Plan, Mossdale Landing is a mixed-use master planned community that calls for approximately 1,700 dwelling units, and approximately 654,000 square feet of village and service commercial uses, schools, parks, and open space.

**Mossdale Landing East**

Located west of I-5 and just south of River Islands Parkway, Mossdale Landing East is a mixed-use master planned community consisting of approximately 485 dwelling units, approximately 500,000 square feet of highway commercial, village commercial and service commercial uses, parks, and open space.

**Mossdale Landing South**

Located just south of the Mossdale Landing site, Mossdale Landing South is a mixed-use master planned community consisting of 219 dwelling units, approximately 407,000 square feet of service commercial, as well as parks and open space.

Since Adoption of the plan, this area has been substantially built-out, however, the area still has undeveloped lands with development potential in the northwest, and southern portions of the project area.

As shown in Table 1.1-5, existing assessed development in the Mossdale Village project area includes 2,118 residential units, and 296,986 square feet of commercial, industrial, and office development.

**TABLE 1.1-5: MOSSDALE VILLAGE PROJECT AREA - EXISTING ASSESSED DEVELOPMENT**

<i>PLAN AREA</i>	<i>APN COUNT</i>	<i>ACRES (GIS)</i>	<i>RESIDENTIAL UNITS</i>	<i>NON-RESIDENTIAL SQ FT</i>
Mossdale Village	2,231	732.00	2,118	296,986

*SOURCE: SAN JOAQUIN COUNTY ASSESSOR’S OFFICE, 2017; DE NOVO PLANNING GROUP, 2018.*

**River Islands Project Area**

The River Islands project area (adopted in 2002 with subsequent addendums through May 14, 2015), is located within the West Area Specific Plan west of I-5 and the San Joaquin River and north of I-205. Encompassing nearly 5,000 acres, River Islands intended to provide a mix of housing types, and limited commercial uses. Residential districts will support housing, parks, water features, and schools, as well as limited commercial and employment development. Up to 11,000 residences are proposed, ranging from single-family-detached homes to condominiums, townhouses, apartments, and active adult (senior-oriented) housing. At buildout, the proposed project is expected to generate Approximately 31,680 residents and 16,751 jobs.

Since adoption of the project, this area has experienced significant development, with many sites currently under construction, however the majority of the land area still remains largely undeveloped.

As shown in Table 1.1-6, existing assessed development in the River Islands project area (as of April 2017) includes 775 residential units, and 6,210 square feet of non-residential development.

**TABLE 1.1-6: RIVER ISLANDS PROJECT AREA - EXISTING ASSESSED DEVELOPMENT**

PLAN AREA	APN COUNT	ACRES (GIS)	RESIDENTIAL UNITS	NON-RESIDENTIAL SQ FT
River Islands	959	4,521.73	775*	6,210

SOURCE: SAN JOAQUIN COUNTY ASSESSOR’S OFFICE, 2017; DE NOVO PLANNING GROUP, 2018.

\*NOTE: AS OF APRIL 2019, APPROXIMATELY 1,900 LOTS HAVE FINAL MAPS (OF WHICH APPROXIMATELY 75% ARE OCCUPIED).

**City of Lathrop Zoning Ordinance**

Title 17 of the Lathrop Municipal Code is the City’s Zoning Ordinance. The Zoning Ordinance carries out the policies of the General Plan by classifying and regulating the uses of land and structures within the City, consistent with the General Plan. The Zoning Ordinance is adopted to protect and promote the public health, safety, comfort, convenience, prosperity, and general welfare of residents and businesses. More specifically, the code is adopted to achieve the following objectives:

- A. To provide a zone plan to guide the physical development of the city in such a manner as to achieve progressively the general arrangement of land uses described and depicted in the general plan;
- B. To foster wholesome, serviceable and attractive living environment, the beneficial development of areas which exhibit conflicting patterns of use, and the stability of existing land uses which conform with objectives, policies, principles and standards of the general plan;
- C. To prevent excessive population densities and overcrowding of land with structures;
- D. To promote a safe, effective circulation system, the provision of adequate off-street parking and truck loading facilities, and the appropriate location of community facilities.
- E. To protect and promote appropriately located commercial and industrial activities in order to preserve and strengthen the city's economic base;
- F. To protect and enhance real property values and city's natural assets;
- G. To ensure unimpeded development of such new urban expansion that is logical, desirable and in conformance with objectives and policies of the general plan;
- H. To provide and protect open space in accordance with policies of the resources management element of the general plan, including avoiding the premature development of prime agricultural lands.

### **Local Agency Formation Commission of San Joaquin County**

In 1963, the State Legislature created a LAFCO for each county, with the authority to regulate local agency boundary changes. Subsequently, the State has expanded the authority of a LAFCO. The goals of a LAFCO include preserving agricultural and open space land resources and providing for efficient delivery of services. The San Joaquin LAFCO has authority over land use decisions in San Joaquin County affecting local agency boundaries. Its authority extends to the incorporated cities, including annexation of County lands into a city, and special districts within the County. LAFCO has the authority to review and approve or disapprove the following:

- Annexations to or detachments from cities or districts;
- Formation or dissolution of districts;
- Incorporation or disincorporation of cities;
- Consolidation or reorganization of cities or districts;
- Extensions of service beyond an agency's jurisdictional boundaries;
- Development of, and amendments to, Spheres of Influence (SOI). The SOI is the probable physical boundary and service area of each local government agency. This may extend beyond the current service area of the agency; and
- Provision of new or different services by districts.

In addition, LAFCO conducts Municipal Service Reviews (MSRs) for services within its jurisdiction. A MSR typically includes a review of existing municipal services provided by a local agency and its infrastructure needs and deficiencies. It also evaluates financing constraints and opportunities, management efficiencies, opportunities for rate restructuring and shared facilities, local accountability and governance, and other issues.

Legislation, including Assembly Bill 1555 and Senate Bill 244, has been enacted to encourage the identification and annexation of islands, which are unincorporated areas substantially surrounded by a city or cities.

### **San Joaquin County's Aviation System Airport Land Use Compatibility Plan**

In July 2009, the San Joaquin County's Aviation System Airport Land Use Commission adopted the Airport Land Use Compatibility Plan (ALUCP), which sets forth the "referral area boundaries" around each airport in the County and the limits on land use, building height, and population density in those areas. The ALUCP regulates land use in three major areas: safety zones, noise zones, and height restrictions. It provides land use compatibility guidelines for lands near the airport, to avert potential safety problems and to ensure unhampered airport operations. The ALUCP establishes two compatibility areas: safety and noise.

Under California Government Code Section 65302.3(a), general plans must be consistent with any airport land use plan adopted pursuant to Public Utilities Code Section 21675. The Stockton Metropolitan Airport is the closest airport to Lathrop. The northernmost portion of the city and the city's SOI are located within the airport influence area for the Stockton Metropolitan Airport identified in the ALUCP.

### **San Joaquin County General Plan**

San Joaquin County adopted its General Plan in December 2016. The County's General Plan provides a comprehensive set of goals, policies, and implementing actions to guide the County's growth through the year 2035. The County's General Plan includes the following Elements:

- Community Development

## 1.0 LAND USE AND SOCIOECONOMICS

- Public Facilities and Services
- Public Health and Safety
- Natural and Cultural Resources

The County’s General Plan establishes allowed land uses for lands within the Lathrop’s SOI. While the City of Lathrop General Plan Land Use Map identifies planned land uses within the SOI, San Joaquin County has ultimate land use planning and project approval authority within the SOI unless the lands are annexed to the City.

The County’s land use designations for areas within the SOI are summarized in Table 1.1-7 and the County’s land use designations for the unincorporated area around the City are shown on Figure 1.1-3.

**TABLE 1.1-7: SAN JOAQUIN COUNTY LAND USE DESIGNATIONS IN AOI AND SOI**

<i>LAND USE</i>	<i>ACREAGE*</i>
<b>AOI</b>	<b>2,509.58</b>
Agriculture/General	1,949.81
Agriculture/Urban Reserve	400.81
Commercial/Freeway Service	16.75
Industrial/Limited	50.92
Open Space/Resource Conservation	91.29
<b>SOI</b>	<b>200.93</b>
Agriculture/General	9.24
Agriculture/Urban Reserve	62.73
Commercial/Freeway Service	12.07
Industrial/General	4.91
Industrial/Limited	111.99
<b>Grand Total</b>	<b>2,710.51</b>

*\*NOTE: NON-PARCEL SPECIFIC ACREAGE INCLUDES ROW.*

*SOURCE: SAN JOAQUIN COUNTY, 2017; DE NOVO PLANNING GROUP, 2018.*

## EXISTING SETTING

### Land Use Patterns

When discussing land use, it is important to distinguish between planned land uses and existing land uses. The General Plan land use designations identify the long-term planned use of land but do not present a complete picture of existing land uses. The San Joaquin County Assessor’s office maintains a database of existing land uses on individual parcels, including the number of dwelling units and related improvements such as non-residential building square footage. This information is used as the basis for property tax assessments and is summarized in Table 1.1-8 and depicted on Figure 1.1-2.

**TABLE 1.1-8: ASSESSED LAND USES – CITY OF LATHROP PLANNING AREA**

<i>LAND USE CODE</i>	<i>PARCEL COUNT</i>	<i>ACRES (GIS)</i>	<i>RESIDENTIAL UNITS</i>	<i>NON-RES SQ FT</i>
Commercial	168	546.89	0	1,524,804
Communication/Utilities	35	32.67	0	144
Industrial Manufacturing	198	1,235.19	0	5,133,541
Industrial Non-Manufacturing	67	752.00	0	14,109,463



## 1.0 LAND USE AND SOCIOECONOMICS

<i>LAND USE CODE</i>	<i>PARCEL COUNT</i>	<i>ACRES (GIS)</i>	<i>RESIDENTIAL UNITS</i>	<i>NON-RES SQ FT</i>
Office	17	29.68	0	366,627
Single Family Residential	6,421	5,286.86	6,161	1,583
Multifamily Residential	78	53.72	111	0
Institutional	260	1,636.46	0	59,816
Agricultural	82	3,291.71	0	355,449
Parks Recreation / Open Space	16	23.43	0	672
No Use Code	146	1,577.88	0	0
Non-Taxable	7	15.72	0	0
<b>Total</b>	<b>7,495</b>	<b>14,482.22</b>	<b>6,272</b>	<b>21,552,099</b>

SOURCE: SAN JOAQUIN COUNTY ASSESSOR'S OFFICE, 2017; DE NOVO PLANNING GROUP, 2018.

Existing land uses refer to the existing built environment, which may be different from the land use or zoning designations applied to land for planning purposes. Existing land uses are based on data provided by the County Assessor and are described below.

### *RESIDENTIAL*

Residential uses in Lathrop include single-family houses and multi-family developments.

*Single family residential* is the dominant developed land use type in the city and planning area, accounting for 37.5% of the planning area's land area. Single family residential land uses are generally located throughout the city, as shown on Figure 1.1-2. There are approximately 6,161 single family residential units in the planning area, located on 5,286.86 acres. The majority of single family residential units (6,009 units) are typical single family residences, with one residence located on one parcel.

*Multifamily residential* refers to parcels that contain more than one housing unit, including duplexes, triplexes, fourplexes, condominiums, townhomes, and apartment buildings. Multifamily residential accounts for 0.4% of the city's planning area, and include 111 dwelling units. The predominate type of multifamily development are duplexes and fourplexes. Multifamily uses located throughout the city are shown on Figure 1.1-3.

### *COMMERCIAL*

Commercial uses, as identified by the County Assessor, are varied. The predominant type of commercial land use, based on the percent of total acres, is vacant and undeveloped commercial lands, which accounts for 85 of the 168 total parcels. Assessed uses within the Commercial category include: motels less than 50 units (2.20 acres), motels over 50 units (4.36 acres), mobile home park (31.82 acres), vacant commercial land – undev (201.75 acres), vacant commercial land w/utilities (28.10 acres), vacant commercial land w/misc imps (29.78 acres), single story (13.90 acres), multiple stores in one building (1.99 acres), store with res. unit or units (2.51 acres), grocery store (4.24 acres), supermarkets (6.04 acres), convenience store (0.36 acres), convenience store with gas sales (2.71 acres), community shopping center (2.39 acres), neighborhood shopping center (5.52 acres), medical offices (1.33 acres), veterinary hospitals (1.60 acres), restaurants (5.04 acres), fast food restaurants (5.01 acres), cocktail lounge – bars (0.85 acres), service station w/car wash (0.73 acres), truck terminals (153.37 acres), self service station w/mini mart (6.10 acres), convenience store (mini-mart) w/ gas (1.02 acres), used car lot (1.76 acres), other sales centers-(trailers, mobile home (9.14 acres), auto & truck repairs & accessories (18.15 acres), specialty shops -tires, brakes, etc. (0.70 acres), self-service car wash (0.68 acres), and auto body shop (1.62 acres).

As shown on Figure 1.1-2, many of the city's commercial uses are located in and around the central portions of the city and adjacent to Interstate-5.

### *INDUSTRIAL MANUFACTURING*

Industrial uses (manufacturing) make up 198 parcels on 1,235.19 acres. Assessed Manufacturing industrial uses include vacant industrial land undeveloped (253.47 acres), vacant industrial land - developed with utilities (77.47 acres), vacant industrial land w/misc improvements (191.51 acres), industrial condo (9.17 acres), specialty lumber products (5.00 acres), cold storage or refrigerated warehouse (126.11 acres), other food processing (18.38 acres), feed & grain mills (9.47 acres), heavy industry (251.19 acres), and sand & gravel – shale manufacturing (293.43 acres located within the Stewart Tract area). Industrial Manufacturing uses located throughout the city are shown on Figure 1.1-2.

### *INDUSTRIAL NON-MANUFACTURING*

Industrial uses (non-manufacturing) make up 67 parcels on 752.00 acres. Assessed Industrial non-manufacturing uses include: light industrial (151.22 acres), light industrial & warehousing (141.96 acres), light industrial warehousing multiple tenants (19.42 acres), shop-work area w/small office (2.58 acres), warehousing – active (365.65 acres), warehousing – yard (6.74 acres), mini storage warehousing (9.77 acres), industrial common area (4.56 acres), other industrial uses (32.44 acres), and parking lots – fee (17.67 acres). Industrial Non-Manufacturing uses located throughout the city are shown on Figure 1.1-2.

### *INSTITUTIONAL*

Institutional uses include government facilities, schools and colleges, churches, cemeteries/mortuaries, service organizations and group homes, and residential care facilities. Institutional assessed uses include 260 parcels located on 1,636.46 acres. Assessed Institutional uses include: church, synagogue or temple (11.31 acres), SBE valued (351.85 acres), military installation (345.76 acres), misc federal property (379.07 acres), misc state property (2.65 acres), vacant county land (0.01 acres), misc county property (41.15 acres), vacant city lands (97.28 acres), parking lots – garages (0.32 acres), misc city property (203.12 acres), school district properties (143.13 acres), fire districts (2.51 acres), flood control district property (12.88 acres), water district property (34.77 acres), misc. district property (8.29 acres), and public owned land – taxable (2.36 acres). Institutional uses are located throughout the city as shown on Figure 1.1-2.

### *OFFICE*

The office category includes office buildings, multiple combination buildings of offices and shops, and office buildings with residential units. The city contains 17 parcels of office uses on 29.68 acres. Assessed Office uses include: 1 story office building (20.90 acres), 3 or more story office bldg. (0.84 acres), office bldg w/res unit or units (0.34 acres), and commercial - other (7.61 acres). Office uses are located throughout the city as shown on Figure 1.1-2.

### *PARKS, RECREATION AND OPEN SPACE*

Parks, recreation and open-space make up 16 parcels on 23.43 acres. City parks and other recreational facilities represent the highest amount of the park, recreation facilities category with 14 parcels on 18.89 acres. Private campground or resort is located on 1 parcel totaling 3.14 acres. Open space uses include rivers & lakes are assessed on 1 parcel and total 1.41 acre. Assessed park and recreation facilities, and open-space uses are located throughout the city as shown on Figure 1.1-2.

*AGRICULTURAL LAND*

The agriculture and land category includes agricultural lands with one residence, orchards and crops, dry-farming and grazing land, and agricultural preserves. The city contains 82 parcels of agricultural uses on 3,291.71 acres. Assessed agricultural uses include: irrigated fruit orchard w/o res (492.73 acres), irrigated fruit orchard w/res (96.92 acres), irrigated field crops only (1502.74 acres), irrigated field crops w/residence (681.73 acres), horse ranch w/residence (90.22 acres), feed lots (12.73 acres), dry farm w/o res (41.99 acres), waste lands (27.50 acres), berms (11.37 acres), and potential industrial subdivision (333.78 acres). Agricultural uses are generally located along the borders of the city, and are shown on Figure 1.1-2.

*COMMUNICATION AND UTILITIES*

The communication and utilities category includes 35 parcels on 32.67 acres. Assessed communication and utilities uses include: mutual water company (3.00 acres), radio & TV broadcast sites (0.01 acres), pipeline right-of-way (0.60 acres), right-of-way (2.51 acres), private road (0.67 acres), tank site (1.50 acres), and municipal utility - reservoirs-sewer (24.38 acres). Communication and utilities uses are shown on Figure 1.1-2.

*NON-TAXABLE*

The non-taxable category includes non-taxable public-owned land, roads, and street. The city contains 7 parcels of non-taxable uses on 15.72 acres. Assessed non-taxable uses include: common areas - roads & streets (0.21 acres), and public owned land - non-taxable (15.52 acres).

*NO USE CODE*

The no use code category identifies land without a use code assigned. The city contains 146 parcels without a use code assignment on 1,577.88 acres. All lands designated by the County Assessors as having “no use code” are assessed as being void of development, and are generally located in undeveloped agricultural areas.

**Development Trends**

Lathrop began with a store and schoolhouse prior to construction of the Central Pacific Railroad around 1870, and was known as Wilson's Station. The Town's growth through the 1870's was steady, reaching a population of about 600 by 1879. Lathrop entered a period of decline in the 1880's which was to continue for nearly 50 years. With the transfer of the railroad roundhouse and machine shop to Tracy, the transfer of rural postal customers to Manteca and a major fire in 1911, Lathrop's population and economy dwindled until World War II. The war brought Permanente Metals and the Sharpe Army Depot to town. Permanente produced aircraft parts and magnesium bombs, while the Depot became one of the major army supply depots in the Western United States. During the 1940's, Lathrop expanded from its original townsite to an area of about five square miles. Housing tracts were constructed during postwar years and Lathrop became home to large industrial employers including Best Fertilizer, and Libby-Owens-Ford which produced auto glass. Residential growth was slow during the 1950's and 1960's, but accelerated through the '70's and '80's. Nearly all of the vacant land between the original townsite and Interstate 5 has been developed. With about 3,700 people and 1,100 homes in 1980, Lathrop expanded to a population of 6,841 in 1990 and about 7,000 in early 1991. Lathrop became a municipality by a majority vote in the election held in 1989. As of April 2017 the City of Lathrop includes a population of 23,110, and has 21,552,099 square feet of assessed non-residential square feet, and 6,272 assessed residential units.

Table 1.1-9 below and Figure 1.1-4 shows the residential development trends within the City.

# 1.0 LAND USE AND SOCIOECONOMICS

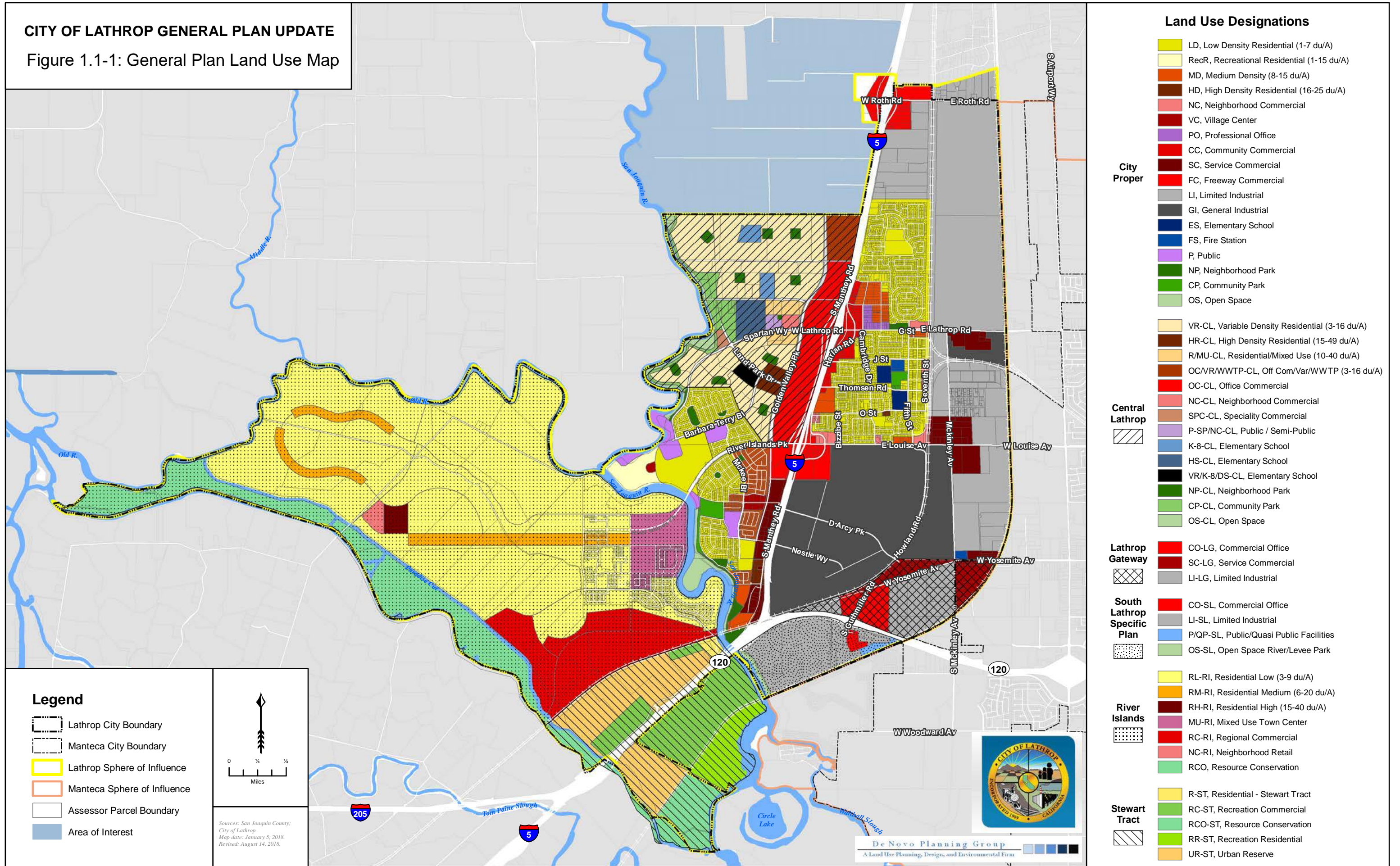
**TABLE 1.1-9: DEVELOPMENT TRENDS**

YEAR/AREA	NON-RES S.F.	RESIDENTIAL-UNITS
<b>Pre-1940</b>	<b>23,133</b>	<b>50</b>
AOI – Area of Interest	0	3
City Proper	21,483	42
LG – Lathrop Gateway	1,650	2
RI – River Islands	0	1
SL – South Lathrop SP	0	1
ST - Stewart Tract	0	1
<b>1940-1959</b>	<b>60,324</b>	<b>144</b>
AOI – Area of Interest	20,417	16
City Proper	17,614	104
CL - Central Lathrop	12,574	1
LG – Lathrop Gateway	9,719	22
ST - Stewart Tract	0	1
<b>1960-1979</b>	<b>112,089</b>	<b>561</b>
AOI – Area of Interest	22,937	13
City Proper	22,718	532
CL – Central Lathrop	31,309	4
LG – Lathrop Gateway	35,125	11
RI – River Islands	0	1
<b>1980-1999</b>	<b>812,247</b>	<b>1,776</b>
AOI – Area of Interest	0	4
City Proper	778,184	1,764
CL– Central Lathrop	14,711	1
LG – Lathrop Gateway	0	7
SL – South Lathrop SP	19,352	0
<b>2000-2017</b>	<b>83,469</b>	<b>3,637</b>
AOI – Area of Interest	26,768	2
City Proper	48,992	2,928
RI – River Islands	0	707
ST - Stewart Tract	7,709	0
<b>No Year Given</b>	<b>20,460,837</b>	<b>104</b>
AOI – Area of Interest	287,190	5
City Proper	19,959,670	30
CL – Central Lathrop	31,943	2
LG – Lathrop Gateway	113,926	1
RI – River Islands	6,210	66
SL – South Lathrop SP	39,772	0
ST - Stewart Tract	22,126	0
<b>Grand Total</b>	<b>21,552,099</b>	<b>6,272</b>

SOURCE: SAN JOAQUIN COUNTY ASSESSOR'S OFFICE, 2017; DE NOVO PLANNING GROUP, 2018.

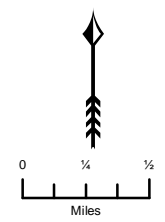
**CITY OF LATHROP GENERAL PLAN UPDATE**

**Figure 1.1-1: General Plan Land Use Map**



**Legend**

- Lathrop City Boundary
- Manteca City Boundary
- Lathrop Sphere of Influence
- Manteca Sphere of Influence
- Assessor Parcel Boundary
- Area of Interest



Sources: San Joaquin County;  
City of Lathrop.  
Map date: January 5, 2018.  
Revised: August 14, 2018.

**Land Use Designations**

- |  |   |
|--|---|
|  | LD, Low Density Residential (1-7 du/A)          |
|  | RecR, Recreational Residential (1-15 du/A)      |
|  | MD, Medium Density (8-15 du/A)                  |
|  | HD, High Density Residential (16-25 du/A)       |
|  | NC, Neighborhood Commercial                     |
|  | VC, Village Center                              |
|  | PO, Professional Office                         |
|  | CC, Community Commercial                        |
|  | SC, Service Commercial                          |
|  | FC, Freeway Commercial                          |
|  | LI, Limited Industrial                          |
|  | GI, General Industrial                          |
|  | ES, Elementary School                           |
|  | FS, Fire Station                                |
|  | P, Public                                       |
|  | NP, Neighborhood Park                           |
|  | CP, Community Park                              |
|  | OS, Open Space                                  |
|  | VR-CL, Variable Density Residential (3-16 du/A) |
|  | HR-CL, High Density Residential (15-49 du/A)    |
|  | R/MU-CL, Residential/Mixed Use (10-40 du/A)     |
|  | OC/R/WWTP-CL, Off Com/Var/WWTP (3-16 du/A)      |
|  | OC-CL, Office Commercial                        |
|  | NC-CL, Neighborhood Commercial                  |
|  | SPC-CL, Speciality Commercial                   |
|  | P-SP/NC-CL, Public / Semi-Public                |
|  | K-8-CL, Elementary School                       |
|  | HS-CL, Elementary School                        |
|  | VR/K-8/DS-CL, Elementary School                 |
|  | NP-CL, Neighborhood Park                        |
|  | CP-CL, Community Park                           |
|  | OS-CL, Open Space                               |
|  | CO-LG, Commercial Office                        |
|  | SC-LG, Service Commercial                       |
|  | LI-LG, Limited Industrial                       |
|  | CO-SL, Commercial Office                        |
|  | LI-SL, Limited Industrial                       |
|  | P/QP-SL, Public/Quasi Public Facilities         |
|  | OS-SL, Open Space River/Levee Park              |
|  | RL-RI, Residential Low (3-9 du/A)               |
|  | RM-RI, Residential Medium (6-20 du/A)           |
|  | RH-RI, Residential High (15-40 du/A)            |
|  | MU-RI, Mixed Use Town Center                    |
|  | RC-RI, Regional Commercial                      |
|  | NC-RI, Neighborhood Retail                      |
|  | RCO, Resource Conservation                      |
|  | R-ST, Residential - Stewart Tract               |
|  | RC-ST, Recreation Commercial                    |
|  | RCO-ST, Resource Conservation                   |
|  | RR-ST, Recreation Residential                   |
|  | UR-ST, Urban Reserve                            |

**City Proper**

**Central Lathrop**

**Lathrop Gateway**

**South Lathrop Specific Plan**

**River Islands**

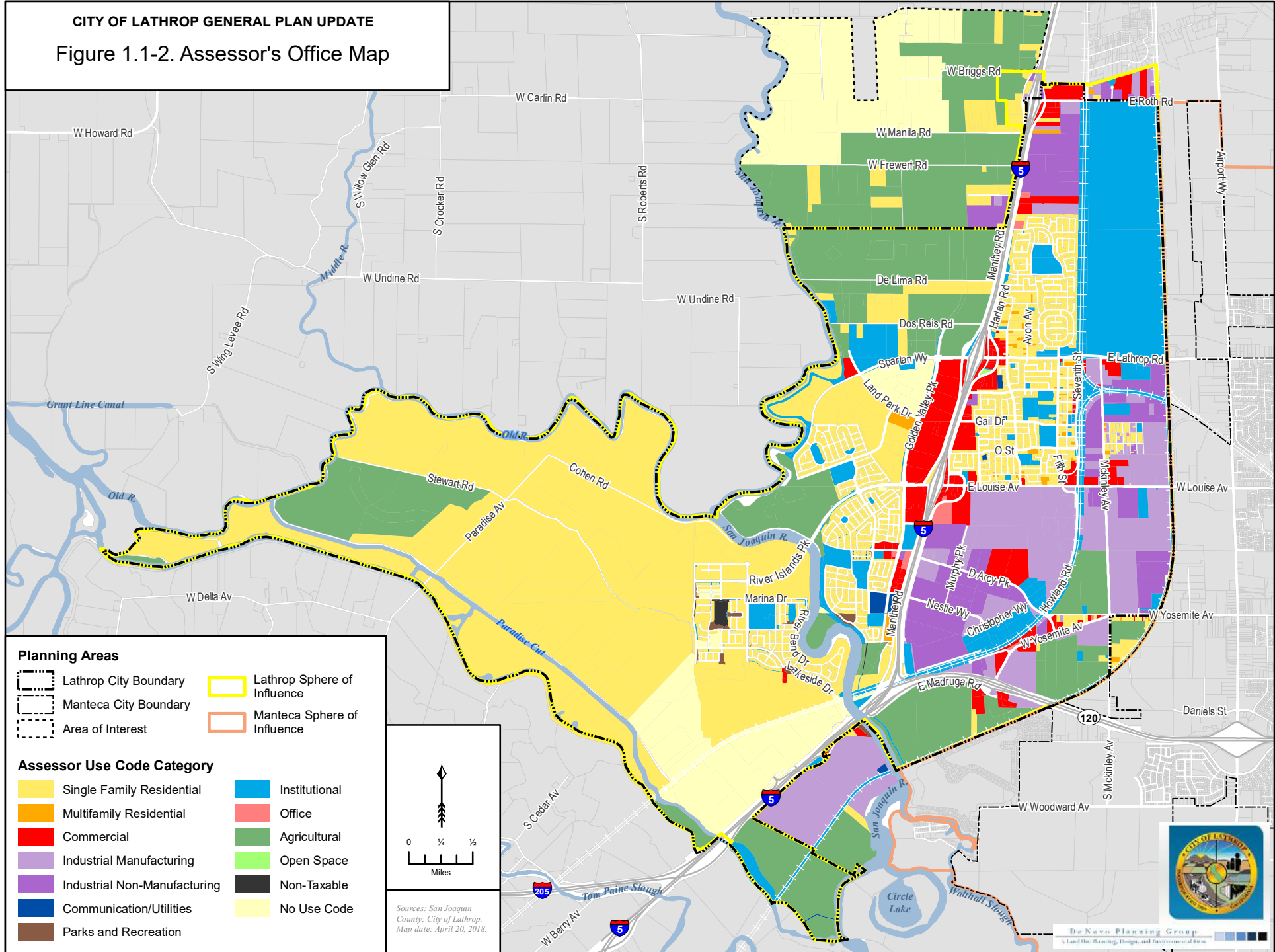
**Stewart Tract**



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**CITY OF LATHROP GENERAL PLAN UPDATE**  
**Figure 1.1-2. Assessor's Office Map**

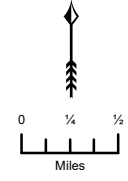


**Planning Areas**

- Lathrop City Boundary
- Manteca City Boundary
- Area of Interest
- Lathrop Sphere of Influence
- Manteca Sphere of Influence

**Assessor Use Code Category**

- Single Family Residential
- Multifamily Residential
- Commercial
- Industrial Manufacturing
- Industrial Non-Manufacturing
- Communication/Utilities
- Parks and Recreation
- Institutional
- Office
- Agricultural
- Open Space
- Non-Taxable
- No Use Code



Sources: San Joaquin County; City of Lathrop.  
 Map date: April 20, 2018.



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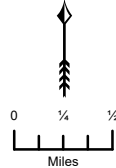


CITY OF LATHROP GENERAL PLAN UPDATE

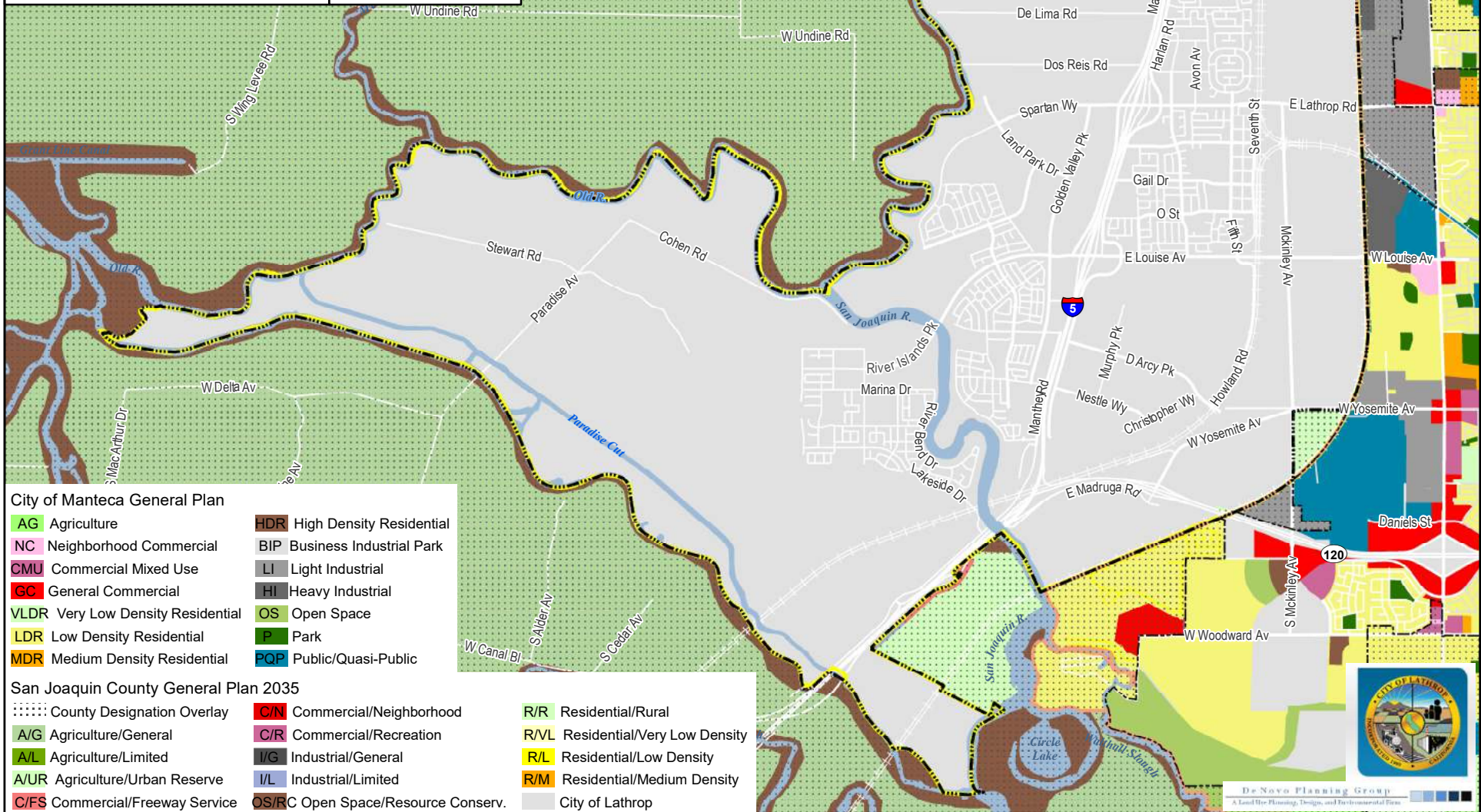
Figure 1.1-3. Surrounding Land Uses

Legend

- Lathrop City Boundary
- Manteca City Boundary
- Lathrop Sphere of Influence
- Manteca Sphere of Influence



Sources: San Joaquin County; City of Lathrop; City of Manteca.  
Map date: April 13, 2018.



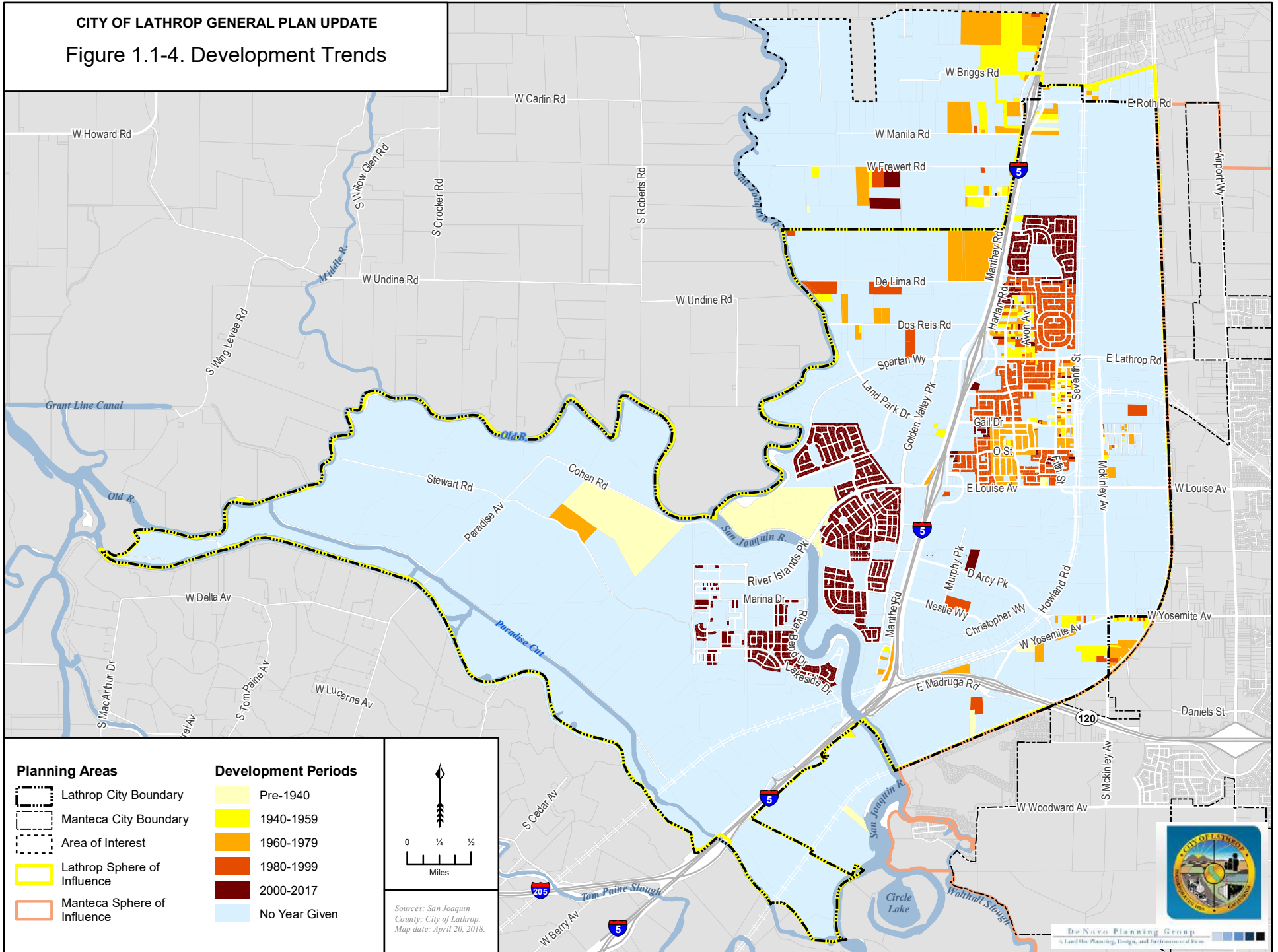
- City of Manteca General Plan**
- AG Agriculture
  - NC Neighborhood Commercial
  - CMU Commercial Mixed Use
  - GC General Commercial
  - VLDR Very Low Density Residential
  - LDR Low Density Residential
  - MDR Medium Density Residential
  - HDR High Density Residential
  - BIP Business Industrial Park
  - LI Light Industrial
  - HI Heavy Industrial
  - OS Open Space
  - P Park
  - PQP Public/Quasi-Public
- San Joaquin County General Plan 2035**
- County Designation Overlay
  - A/G Agriculture/General
  - A/L Agriculture/Limited
  - A/UR Agriculture/Urban Reserve
  - C/FS Commercial/Freeway Service
  - C/N Commercial/Neighborhood
  - C/R Commercial/Recreation
  - I/G Industrial/General
  - I/L Industrial/Limited
  - O/S/R/C Open Space/Resource Conserv.
  - R/R Residential/Rural
  - R/VL Residential/Very Low Density
  - R/L Residential/Low Density
  - R/M Residential/Medium Density
  - City of Lathrop



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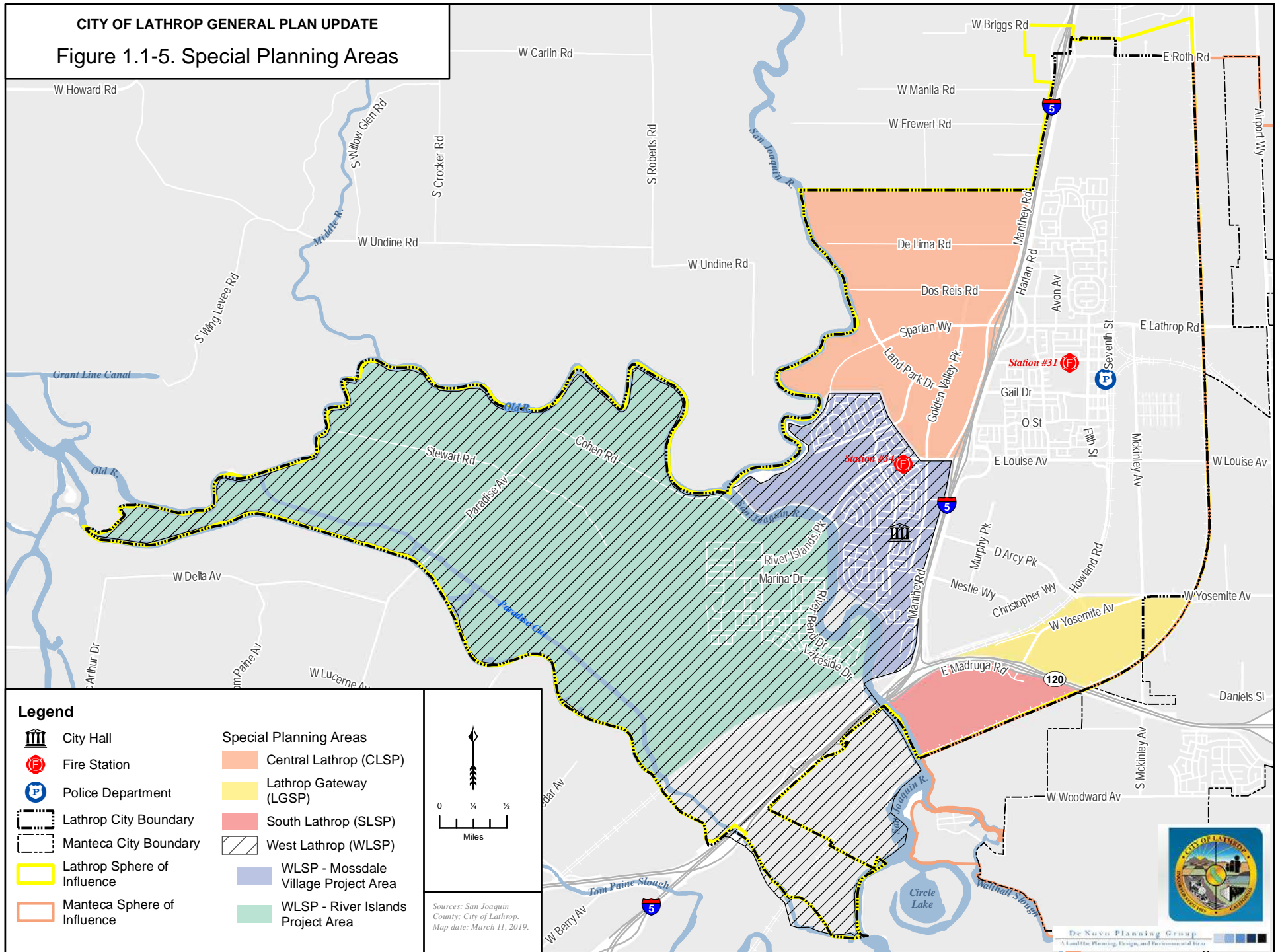
**CITY OF LATHROP GENERAL PLAN UPDATE**  
**Figure 1.1-4. Development Trends**



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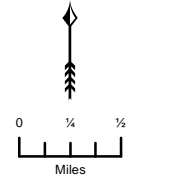
CITY OF LATHROP GENERAL PLAN UPDATE

Figure 1.1-5. Special Planning Areas



Legend

- City Hall
  - Fire Station
  - Police Department
  - Lathrop City Boundary
  - Manteca City Boundary
  - Lathrop Sphere of Influence
  - Manteca Sphere of Influence
- Special Planning Areas**
- Central Lathrop (CLSP)
  - Lathrop Gateway (LGSP)
  - South Lathrop (SLSP)
  - West Lathrop (WLS)
  - WLS - Mossdale Village Project Area
  - WLS - River Islands Project Area



Sources: San Joaquin County; City of Lathrop. Map date: March 11, 2019.



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## 1.2 POPULATION HOUSING AND DEMOGRAPHICS

This section summarizes the city’s demographics and housing profile and trends in the City of Lathrop. For perspective, this includes comparisons with San Joaquin County as a whole. The analysis primarily utilizes data from Esri Business Analyst (a private economic and demographic data vendor) and the U.S. Census Bureau, including both the 2010 Census and 2012-2016 five-year American Community Survey (ACS) estimates. Where appropriate, data are also provided from a variety of other data sources, including the California Employment Development Department (EDD), California Department of Finance (DoF), and the San Joaquin Council of Governments (SJCOG), among others.

More detailed information regarding population and housing, including population and household characteristics and a housing needs assessment, is provided in the City’s Housing Element.

### REGULATORY FRAMEWORK

The regulatory framework discussion describes laws and regulations that guide land use decisions. Adopted plans that pertain to the City are also described.

#### *STATE*

#### **California General Plan Law**

Government Code Section 65300 requires that each county and city adopt a General Plan, as described in Section 1.1.

Housing element law (Government Code Sections 65580 through 65589.8) requires local governments to adopt a Housing Element that addresses existing and projected housing needs, including their share of the regional housing need. A Housing Element must include an analysis of existing and projected housing needs, identification of governmental and non-governmental constraints to the provision of housing, an inventory of sites appropriate to accommodate the City’s housing needs, identification of resources available to assist with meeting housing needs, a review of the effectiveness of the previous Housing Element, and a plan to address the identified housing needs and constraints.

#### *LOCAL AND REGIONAL*

#### **Regional Housing Needs Plan**

California General Plan law requires each city and county to have land zoned to accommodate a fair share of the regional housing need. The share is known as the Regional Housing Needs Allocation (RHNA) and is based on a Regional Housing Needs Plan (RHNP) developed by councils of government. The San Joaquin Council of Governments (SJCOG) is the lead agency for developing the RHNP for the San Joaquin County area that includes the Cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy. Lathrop’s fair share of the adopted RHNA for 2014-2023 is summarized in Table 1.2-1.

The City is not required to ensure that adequate development to accommodate the RHNA occurs; however, the City must facilitate housing production by ensuring that land is available and that unnecessary development constraints have been removed. The City’s Housing Element, adopted in 2016, provides for the accommodation of the 2014-2023 RHNA that has been assigned to the City of Lathrop.

**TABLE 1.2-1: REGIONAL HOUSING NEEDS ALLOCATION**

EXTREMELY LOW INCOME	VERY LOW INCOME	LOW INCOME	MODERATE INCOME	ABOVE MODERATE INCOME	TOTAL
<i>2014 - 2023</i>					
526	493	759	957	2,421	5,156

SOURCE: SJCOG, 2014-2023 REGIONAL HOUSING NEEDS PLAN (RHNP), AUGUST 2014.

**City of Lathrop General Plan**

The City’s Housing Element, one of the seven mandated General Plan elements, was adopted September 19, 2016. The Housing Element establishes the following six goals related to the development of housing in Lathrop:

**GOAL 1 HOUSING OPPORTUNITIES AND ACCESSIBILITY**

Promote the availability and quality of housing affordable to all income levels and households types, including extremely low, very low, and low income households and special needs groups, through maintaining an inventory of adequate housing sites and supporting funding opportunities.

**GOAL 2 REMOVE CONSTRAINTS**

Remove constraints that hinder the development of housing, including housing for extremely low, very low, low, and moderate income households, and housing for special needs groups, including senior, disabled, developmentally disabled, single parent, large family, farmworker, and homeless populations.

**GOAL 3: PRESERVE, REHABILITATE, AND ENHANCE EXISTING HOUSING AND NEIGHBORHOODS**

Preserve the availability of existing housing opportunities and to conserve as well as enhance the quality of existing dwelling units and residential neighborhoods.

**GOAL 4: PROVIDE HOUSING FREE FROM DISCRIMINATION**

Ensure that all existing and future housing opportunities are open and available to all members of the community without discrimination on the basis of race, color, religion, sex, national origin or ancestry, marital status, age, household composition or size, or any other arbitrary factors.

**GOAL 5: ENCOURAGE AND ENHANCE COORDINATION**

Coordinate local housing efforts with appropriate federal, state, regional, and local governments and/or agencies and to cooperate in the implementation of intergovernmental housing programs to ensure maximum effectiveness in solving local and regional housing problems.

**GOAL 6: ENERGY CONSERVATION**

Encourage energy conservation measures in new and existing housing.

The Land Use Element identifies a range of land use categories for residential use. The Land Use Element and land use designations are described in greater detail in Section 1.1, Land Use.

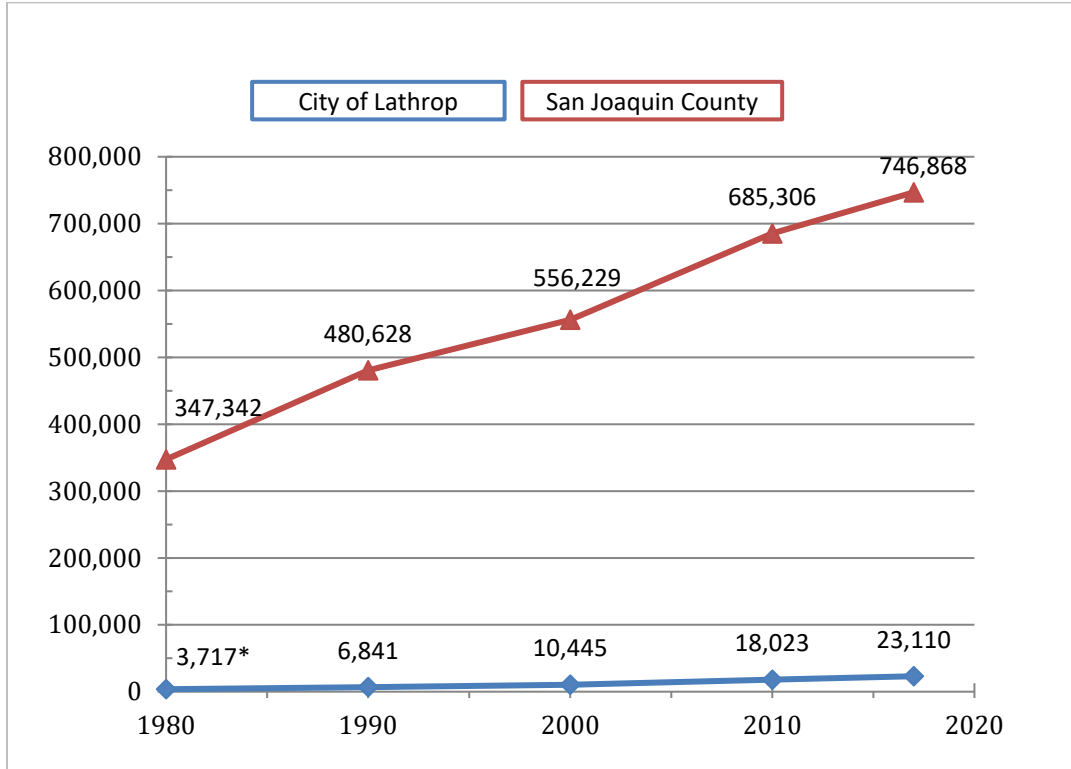


EXISTING SETTING

**Population and Households**

Historical population growth trends in Lathrop are depicted in Chart 1.2-1. Table 1.2-2 summarizes the population and household data for Lathrop and San Joaquin County from 1980 through 2017.

**CHART 1.2-1: CITY OF LATHROP AND SAN JOAQUIN COUNTY POPULATION TRENDS (1980-2017)**



\*POPULATION PRIOR TO INCORPORATION IN 1989

**TABLE 1.2-2: POPULATION AND HOUSEHOLD GROWTH**

	1990	2000	2010	2017	1990-2000 % CHANGE	2000-2010 % CHANGE	2010-2017 % CHANGE	AVG. ANNUAL CHANGE
<i>LATHROP</i>								
<b>Population</b>	6,841	10,445	18,023	23,110	53%	72%	28%	9%
<b>Households</b>	1,927	2,908	4,782	5,992	51%	64%	25%	8%
<b>Persons per household</b>	3.55	3.59	3.77	3.86	1%	5%	2%	0.3%
<i>SAN JOAQUIN COUNTY</i>								
<b>Population</b>	480,628	563,598	685,306	746,868	17%	22%	9%	2%
<b>Households</b>	166,274	181,629	215,007	228,875	9%	18%	7%	1%
<b>Persons per household</b>	2.94	3.00	3.12	3.20	2%	4%	3%	0.3%

SOURCE: U.S. CENSUS, 1990, 2010; LATHROP HOUSING ELEMENT, 2016; CALIFORNIA DEPARTMENT OF FINANCE, 2017.

Lathrop incorporated in 1989 and by 1990, the US Census Bureau recorded the population at 6,841. From 1990 to 2000, the city’s population increased by 58% from 6,841 to 10,445 persons. From 2000 to 2010 Lathrop experienced population growth increasing by approximately 72% from 10,445 to 18,023. San Joaquin County's total population increased by approximately 20% during the decades of 1990-2000 and 2000-2010. Between 1990 and 2017, Lathrop’s population growth rate averages 9% per year, while that of San Joaquin County is an average of 2% per year. As of January 2017, Lathrop’s population was estimated to be 23,110, an increase of 28% from the 2010 population of 18,023.

Households have increased at a rate generally proportional to Lathrop’s population, with both households and populations increasing by similar percentages from 1990 to 2000 and household growth slightly less than population growth from 2000 to 2010, and 2010 to 2017. Over the years, the average household size has fluctuated slightly with a high of 3.86 in 2017 and a low of 3.55 in 1990.

**Housing Units**

As shown in Table 1.2-3, the number of housing units in Lathrop has increased at rates similar to the population with significant increases since 1990. In 2017, there were 6,313 housing units in the city. From 2000 to 2010, housing units increased from 2,991 to 5,261, a 76% increase.

**TABLE 1.2-3: HOUSING UNITS**

	1990	2000	2010	2017	1990-2000 %CHANGE	2000-2010 %CHANGE	2010-2017 %CHANGE
<b>Lathrop</b>	2,040	2,991	5,261	6,313	47%	76%	20%
<b>San Joaquin County</b>	158,659	189,160	233,755	241,021	19%	24%	3%

SOURCE: U.S. CENSUS, 2000, 2010; LATHROP HOUSING ELEMENT, 2016, 2010 CALIFORNIA DEPARTMENT OF FINANCE, 2017.

In San Joaquin County, housing units have increased at a much slower pace, with a 24% increase from 2000 to 2010. Due to the recent economic incline, growth in both the population and housing stock over the next few years is anticipated to remain relatively high, compared to historic averages.

The majority of the housing stock in Lathrop is single family detached units, which account for 90.5% of housing units. The remaining housing types include single family attached (1.7%), multi-family duplexes through fourplexes (0.7%), multi-family apartments with five or more units (1.1%), and mobile homes (6.0%).

**Household Type**

The City of Lathrop contains a higher proportion of family households relative to San Joaquin County, a rate that has marginally declined since 2010. As seen in Table 1,2-4, family households account for roughly 84.5 percent of the households within the City, relative to 74.9 percent countywide. While the percentage of non-family households in San Joaquin County remained constant between 2010 and 2017, the City of Lathrop experienced a minor growth in the overall percent of non-family households which account for 15.5 percent of all households in 2017, a minor increase relative to 14.9 percent in 2010.

**TABLE 1.2-4: HOUSEHOLD COMPOSITION, 2010-2017**

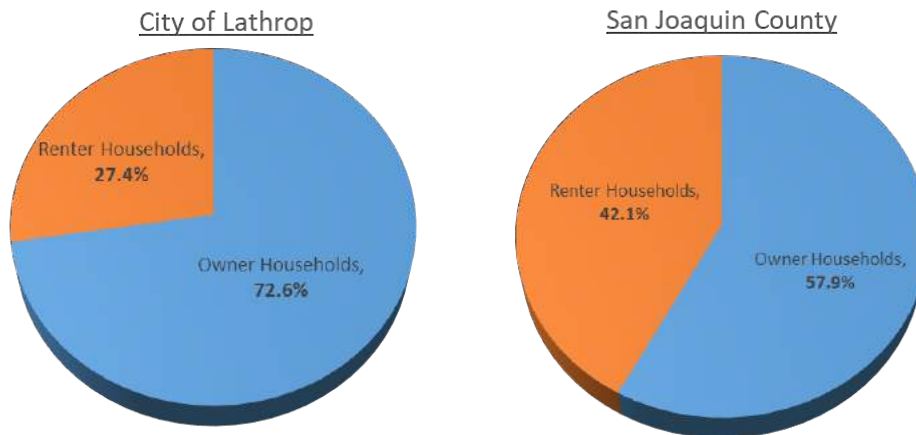
HOUSEHOLD TYPE	2010		2017		% CHANGE 2010-2017
	NUMBER	PERCENT	NUMBER	PERCENT	
<i>CITY OF LATHROP</i>					
Family Households	4,071	85.1%	4,995	84.5%	22.7%
Non-Family Households	711	14.9%	916	15.5%	28.8%
<b>Total</b>	<b>4,782</b>	<b>100%</b>	<b>5,911</b>	<b>100%</b>	<b>23.6%</b>
<i>SAN JOAQUIN COUNTY</i>					
<i>FAMILY HOUSEHOLDS</i>	<i>161,057</i>	<i>74.9%</i>	<i>172,045</i>	<i>74.9%</i>	<i>6.8%</i>
Non-Family Households	53,950	25.1%	57,681	25.1%	6.9%
<b>Total</b>	<b>215,007</b>	<b>100%</b>	<b>229,726</b>	<b>100%</b>	<b>6.8%</b>

SOURCES: U.S. CENSUS BUREAU, 2010 CENSUS; ESRI; BAE, 2017.

**Household Tenure**

The City of Lathrop has a higher concentration of owner households relative to San Joaquin County. As seen below, approximately 72.6 percent of households within the City of Lathrop own their home, versus 57.9 percent countywide. This indicates that renter households are notably under-represented within the City of Lathrop, even as the percentages of renter households have increased since 2010 within both the City and County. More specifically, renter households comprised 24.6 percent of Lathrop households in 2010, which increased to 27.4 percent in 2017, indicating a 2.8 percentage point increase in the overall concentration of renter households. Similarly, the percent of renter households in San Joaquin County increased from 40.8 percent in 2010 to 42.1 percent in 2017, indicating the overall concentration of renter households has grown as the region recovered from the foreclosure crisis that struck the San Joaquin Valley particularly hard.

**CHART 1.2-2: HOUSING UNITS BY TYPE (2017)**



**Age Distribution**

The residents of Lathrop are typically younger in age relative to San Joaquin County, as indicated by the slightly higher median age of Lathrop residents (32.7 years of age) versus the County (33.6 years of age). As seen in Table 1.2-5, children under the age of 18 account for 29.2 percent of Lathrop residents, a slightly larger percentage relative to the County, where children account for 27 percent of residents. Within Lathrop, working age residents between 25 and 54 years of age account for approximately 42.3 percent of the total population, versus 39.4 percent countywide. The largest difference between Lathrop and San

## 1.0 LAND USE AND SOCIOECONOMICS

Joaquin County is the concentration of aging residents. More specifically, while residents over the age of 55 account for 18.3 percent of the City of Lathrop population, the same age category accounts for 23.4 percent of the countywide population, roughly five percentage points higher in concentration.

**TABLE 1.2-5: AGE DISTRIBUTION, 2010 AND 2017**

AGE	2010		2017		% CHANGE 2010-2017
	NUMBER	PERCENT	NUMBER	PERCENT	
<b>City of Lathrop</b>					
Under 18	5,819	32.3%	6,639	29.2%	14.1%
18-24	1,814	10.1%	2,319	10.2%	27.8%
25-34	2,584	14.3%	3,664	16.1%	41.8%
35-44	2,740	15.2%	3,125	13.7%	14.1%
45-54	2,398	13.3%	2,822	12.4%	17.7%
55-64	1,499	8.3%	2,253	9.9%	50.3%
65 or older	1,169	6.5%	1,919	8.4%	64.2%
<b>Total</b>	<b>18,023</b>	<b>100%</b>	<b>22,741</b>	<b>100%</b>	<b>26.2%</b>
<b>Median Age</b>	<b>30.5</b>		<b>32.7</b>		
<b>San Joaquin County</b>					
Under 18	200,724	29.3%	200,867	27.0%	0.1%
18-24	71,312	10.4%	75,657	10.2%	6.1%
25-34	90,815	13.3%	110,526	14.9%	21.7%
35-44	90,738	13.2%	92,744	12.5%	2.2%
45-54	91,839	13.4%	90,157	12.1%	-1.8%
55-64	68,697	10.0%	82,346	11.1%	19.9%
65 or older	71,181	10.4%	91,732	12.3%	28.9%
<b>Total</b>	<b>685,306</b>	<b>100%</b>	<b>744,029</b>	<b>100%</b>	<b>8.6%</b>
<b>Median Age</b>	<b>32.7</b>		<b>33.6</b>		

SOURCES: U.S. CENSUS BUREAU, 2010 CENSUS; ESRI; BAE, 2017.

### Educational Attainment

Residents above the age of 25 within the City of Lathrop display similar levels of educational attainment relative to San Joaquin County residents. For example, as seen in Table 1.2-6, roughly 77.4 percent of Lathrop residents over the age of 25 have at least a high school diploma, versus 78.6 percent countywide. In terms of higher education, a similar proportion of Lathrop residents have earned a bachelor's degree (13.2 percent) relative to San Joaquin County residents (13.0 percent), while San Joaquin County residents are more likely than Lathrop residents to have received a graduate or professional degree, at 6.2 percent and 3.2 percent, respectively.

**TABLE 1.2-6: EDUCATIONAL ATTAINMENT, POPULATION AGE 25+ (2017)**

Educational Attainment	City of Lathrop		San Joaquin County	
	Number	Percent	Number	Percent
Less than 9th Grade	1,524	11.1%	54,036	11.6%
9th to 12th Grade, No Diploma	1,586	11.5%	46,207	9.9%
High School Graduate (incl. Equivalency)	4,034	29.3%	125,120	26.8%
Some College, No Degree	3,174	23.0%	109,777	23.5%
Associate Degree	1,214	8.8%	42,478	9.1%
Bachelor's Degree	1,815	13.2%	60,799	13.0%
Graduate/Professional Degree	437	3.2%	29,088	6.2%
<b>Total</b>	<b>13,784</b>	<b>100%</b>	<b>467,505</b>	<b>100%</b>
Population 25+ with Bachelor's Degree or Higher (%)	16.3%		19.2%	
Population 25+ High School Graduate (incl. Equivalency) or Higher (%)	77.4%		78.6%	

SOURCES: ESRI; BAE, 2017.

## Household Income

Lathrop households have modestly higher incomes relative to households countywide. As seen in Table 1.2-7, the median household income in Lathrop in 2017 is approximately \$68,300, compared to \$56,600 countywide. Based on the distribution of income levels, it is evident that Lathrop contains a larger percentage of middle-income households with incomes between \$50,000 and \$99,999. This income range accounts for 40 percent of Lathrop households, versus only 30 percent of San Joaquin County households. On the upper end of income, Lathrop also contains a higher percentage of households with incomes between \$100,000 and \$149,999, but the city has a lower proportion of households making \$150,000 or more per year, indicating that Lathrop is fairly concentrated in the middle tiers of income, while San Joaquin County has a higher percentage of both lower-income and upper-income households.

**TABLE 1.2-7: HOUSEHOLD INCOME - 2017**

INCOME CATEGORY	CITY OF LATHROP		SAN JOAQUIN COUNTY	
	NUMBER	PERCENT	NUMBER	PERCENT
Less than \$15,000	423	7.2%	25,472	11.1%
\$15,000-\$24,999	403	6.8%	23,478	10.2%
\$25,000-\$34,999	412	7.0%	21,764	9.5%
\$35,000-\$49,999	692	11.7%	30,470	13.3%
\$50,000-\$74,999	1,280	21.7%	39,461	17.2%
\$75,000-\$99,999	1,075	18.2%	29,345	12.8%
\$100,000-\$149,999	1,024	17.3%	33,120	14.4%
\$150,000-\$199,999	409	6.9%	14,744	6.4%
\$200,000 or more	193	3.3%	11,872	5.2%
<b>Total</b>	<b>5,911</b>	<b>100%</b>	<b>229,726</b>	<b>100%</b>
Median HH Income	\$68,263		\$56,624	
Per Capita Income	\$21,359		\$24,776	

SOURCES: ESRI; BAE, 2017.

## Resident Occupation

The occupational profile of employed Lathrop residents is similar to the residents of San Joaquin County as a whole, with only a few differences. As shown in Table 1.2-8, the highest concentration of employed city residents fall within office and administrative support occupations (16.4 percent), followed by transportation and material moving (11.5 percent), sales and sales related occupations (9.6 percent) and

## 1.0 LAND USE AND SOCIOECONOMICS

production occupations (9.3 percent), all of which are highly concentrated occupations countywide. With respect to major over- or under-represented occupations, Lathrop residents are significantly less concentrated in farming, fishing, and forestry occupations, which account for just 1.1 percent of the employed residents in Lathrop but 4.5 percent of countywide employed residents. However, Lathrop residents are slightly more heavily concentrated in production and office support occupations relative to their countywide counterparts.

**TABLE 1.2-8: EMPLOYED RESIDENTS BY OCCUPATION - 2017**

OCCUPATION	CITY OF LATHROP		SAN JOAQUIN COUNTY	
	NUMBER	PERCENT	NUMBER	PERCENT
Management	599	6.3%	23,990	7.8%
Business/Financial	263	2.8%	10,370	3.4%
Computer/Mathematical	167	1.8%	4,581	1.5%
Architecture/Engineering	107	1.1%	4,136	1.4%
Life/Physical/Social Science	9	0.1%	1,449	0.5%
Community/Social Service	104	1.1%	5,358	1.8%
Legal	92	1.0%	1,600	0.5%
Education/Training/Library	372	3.9%	16,531	5.4%
Arts/Design/Entertainment/Sports/Media	72	0.8%	3,310	1.1%
Healthcare Practitioner/Technician	430	4.5%	15,762	5.2%
Healthcare Support	152	1.6%	7,161	2.3%
Protective Service	247	2.6%	7,142	2.3%
Food Preparation/Serving Related	553	5.8%	17,520	5.7%
Building/Grounds Cleaning/Maintenance	382	4.0%	12,169	4.0%
Personal Care/Service	348	3.7%	12,775	4.2%
Sales and Sales Related	905	9.6%	30,570	10.0%
Office/Administrative Support	1,555	16.4%	41,901	13.7%
Farming/Fishing/Forestry	103	1.1%	13,755	4.5%
Construction/Extraction	592	6.2%	15,369	5.0%
Installation/Maintenance/Repair	449	4.7%	10,740	3.5%
Production	880	9.3%	18,487	6.0%
Transportation/Material Moving	1,092	11.5%	30,972	10.1%
<b>Total</b>	<b>9,473</b>	<b>100%</b>	<b>305,648</b>	<b>100%</b>

SOURCES: ESRI; BAE, 2017.

## 1.3 ECONOMIC TRENDS

This section provides an overview of Lathrop’s economy, including employment and labor force characteristics, primary industry sectors, and major employers. The economic conditions within the City of Lathrop will continue to evolve as the City grows. The discussion below frames the existing economic conditions within the City and Region with the intent of identifying possible areas of opportunity over the General Plan time frame.

### Major Employers

Lathrop is home to a number of major distribution facilities for large national companies. As seen in Table 1.3-1, according to the City’s Annual Financial Report, the UPS Distribution Center employs the largest number of employees within the City, with an estimated 850 total employees. In addition, a number of local establishments employ between 100 and 200 workers, including prominent manufacturing, packaging, and distribution facilities. As is evident from the list of employers, the majority of the City’s major employers occupy large industrial space, and are likely attracted to the Lathrop area due to the easy access to Interstate 5 and the Union Pacific railroad, for distribution purposes.

**TABLE 1.3-1: PRINCIPAL EMPLOYERS, CITY OF LATHROP - 2019**

EMPLOYER	NUMBER OF EMPLOYEES
UPS	850
AAFES	800
Tesla	730
Super Store	450
CNP	360
MUSD (Lathrop Schools)	293
Performant DCS	200
Antonini Freight	187
CBC Steel Buildings-Nucor	178
RAD Urban	150
Simplot	145
Del Monte Foods	130
Pratt Industries	120

SOURCES: CITY OF LATHROP, MAJOR COMPANIES EMPLOYEE COUNT FEBRUARY 2019

### Jobs by Industry

In total, the City of Lathrop contains approximately 6,000 total jobs. As shown in Table 1.3-2, jobs broken down by industry, it is evident that Manufacturing is by far the largest industry of employment within the City, accounting for 1,400 jobs, or 23.5 percent of all jobs. Lathrop also contains a significant amount of jobs in Professional and Business Services (740 jobs; 12.3 percent), Transportation, Warehousing, and Utilities (700 jobs; 11.3 percent), and Wholesale Trade (675 jobs; 11.3 percent). Relative to the distribution of jobs by industry in San Joaquin County, Lathrop contains a significantly smaller share of jobs in Educational and Health Services, Government, and Agriculture, Forestry, Fishing, and Hunting. With the exception of Agricultural Services, these industries are likely to increase as a result of population growth, as both educational institutions and health services are predominantly resident-serving. Similarly, as is discussed later in the fiscal background, public sector employment is likely to increase as population growth continues.

**TABLE 1.3-2: JOBS BY INDUSTRY - 2015**

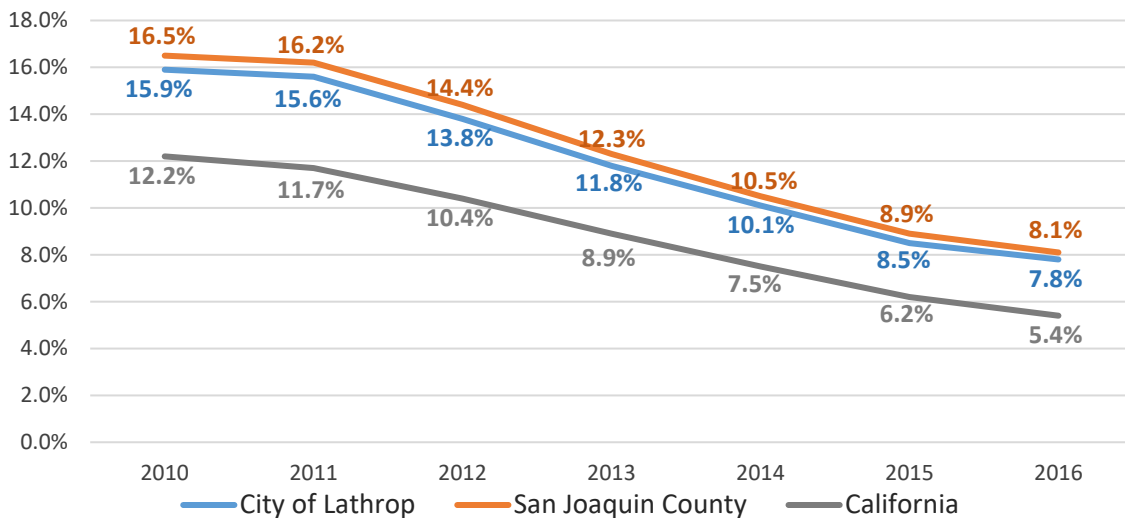
INDUSTRY	CITY OF LATHROP		SAN JOAQUIN COUNTY	
	NUMBER	PERCENT	NUMBER	PERCENT
Construction, Natural Resources & Mining	544	9.1%	10,206	4.3%
Manufacturing	1,404	23.5%	18,925	8.1%
Wholesale Trade	674	11.3%	11,408	4.9%
Retail Trade	495	8.3%	26,142	11.1%
Transportation, Warehousing, & Utilities	696	11.6%	20,090	8.5%
Information	2	0.0%	2,008	0.9%
Financial Activities	79	1.3%	7,344	3.1%
Professional & Business Svcs	737	12.3%	19,708	8.4%
Educational & Health Svcs	287	4.8%	36,443	15.5%
Leisure & Hospitality	445	7.4%	19,651	8.4%
Other Services	178	3.0%	7,057	3.0%
Agriculture, Forestry, Fishing and Hunting	22	0.4%	16,466	7.0%
Government	421	7.0%	39,532	16.8%
<b>Total Employment</b>	<b>5,984</b>	<b>100%</b>	<b>234,980</b>	<b>100%</b>

SOURCES: SAN JOAQUIN ASSOCIATION OF GOVERNMENTS; BAE, 2017.

### Unemployment

The unemployment rate within the City of Lathrop between 2010 and 2016 has generally been slightly below the San Joaquin County unemployment rate, though well above the California unemployment rate. For example, as seen in Chart 1.3-1, the 2010 unemployment rate of Lathrop residents was roughly 15.9 percent, roughly 0.6 percentage points lower than the San Joaquin County rate of 16.5 percent, but almost 4 percentage points higher than the Statewide unemployment rate. As greater economic conditions have improved since 2010, the City of Lathrop unemployment rate has decreased substantially, reducing by half to just 7.8 percent in 2016, though still above the Statewide unemployment rate of 5.4 percent.

**CHART 1.3-1: UNEMPLOYMENT RATE TRENDS, 2010 TO 2016**



SOURCES: CALIFORNIA EDD; BAE, 2017.



**Commute Flow**

Based on commute flow data from the Longitudinal Employer-Household Dynamics database, shown in Table 1.3-3, the largest share of employed Lathrop residents stay within San Joaquin County for work. More specifically, approximately 41.5 percent of Lathrop residents work in various San Joaquin locations, the majority of which travel to Stockton for employment. Only 518 employed Lathrop residents also work in the City, accounting for 6.7 percent of the employed population. The second largest share of employed residents travel to various Alameda County locations, accounting for approximately 18.1 percent of residents, including the Cities of Livermore, Pleasanton, Fremont, and Oakland. Another 8.8 percent travel to Santa Clara County, the majority of which work specifically within the City of San Jose, while 7.3 percent work in Stanislaus County. As is evident from the data, while 41.5 percent of residents remain within the County for work, approximately 27 percent travel to the Bay Area, highlighting the growing influence of the Bay Area housing availability and affordability crisis on San Joaquin County.

**TABLE 1.3-3: COMMUTE FLOW - 2015**

<i>RESIDENTS BY PLACE OF WORK</i>			<i>WORKERS BY PLACE OF RESIDENCE</i>		
<i>PLACE OF WORK</i>	<i>EMPLOYED RESIDENTS</i>		<i>PLACE OF RESIDENCE</i>	<i>WORKERS</i>	
	<i>NUMBER</i>	<i>PERCENT</i>		<i>NUMBER</i>	<i>PERCENT</i>
<b>San Joaquin County</b>	<b>3,217</b>	<b>41.5%</b>	<b>San Joaquin County</b>	<b>3,769</b>	<b>52.0%</b>
Stockton	1,185	15.3%	Stockton	1,339	18.5%
Lathrop	518	6.7%	Manteca	841	11.6%
Tracy	500	6.5%	Lathrop	518	7.1%
Manteca	417	5.4%	Tracy	260	3.6%
<b>Alameda County</b>	<b>1,405</b>	<b>18.1%</b>	Lodi	137	1.9%
Livermore	302	3.9%	Ripon	105	1.4%
Pleasanton	232	3.0%	<b>Stanislaus County</b>	<b>953</b>	<b>13.2%</b>
Fremont	199	2.6%	Modesto	407	5.6%
Oakland	199	2.6%	Turlock	97	1.3%
<b>Santa Clara County</b>	<b>684</b>	<b>8.8%</b>	Ceres	90	1.2%
San Jose	320	4.1%	<b>Sacramento County</b>	<b>379</b>	<b>5.2%</b>
Milpitas	73	0.9%	Sacramento	84	1.2%
Santa Clara	71	0.9%	<b>Alameda County</b>	<b>333</b>	<b>4.6%</b>
<b>Stanislaus County</b>	<b>568</b>	<b>7.3%</b>	Oakland	57	0.8%
Modesto	293	3.8%	Livermore	56	0.8%
<b>All Other Places</b>	<b>1,875</b>	<b>24.2%</b>	<b>All Other Places</b>	<b>1,813</b>	<b>25.0%</b>
<b>Total</b>	<b>7,749</b>	<b>100%</b>	<b>Total</b>	<b>7,247</b>	<b>100%</b>
<b>Live and Work in Lathrop</b>	<b>518</b>	<b>6.7%</b>	<b>Live and Work in Lathrop</b>	<b>518</b>	<b>7.1%</b>
<b>Live in Lathrop but Work Elsewhere</b>	<b>7,231</b>	<b>93.3%</b>	<b>Work in Lathrop but Live Elsewhere</b>	<b>6,729</b>	<b>92.9%</b>

SOURCES: U.S. CENSUS BUREAU, LONGITUDINAL EMPLOYER-HOUSEHOLD DYNAMICS VIA ONTHEMAP; BAE, 2017.

The second data column presented above in Table 1.3-3 shows the place of residence for individuals that work in Lathrop. As seen in the table, roughly 52 percent of Lathrop workers live in San Joaquin County, the largest share of which live in the neighboring Cities of Stockton and Manteca. As noted above, approximately 518 Lathrop workers also live within the City, accounting for 7.1 percent of all Lathrop workers. Stanislaus County is home to the second largest share of Lathrop workers, accounting for roughly 13.2 percent of workers within the City, the largest portion of whom reside in Modesto. A smaller but significant portion of Lathrop workers live in Sacramento and Alameda County, accounting for 5.2 percent and 4.6 percent respectively. Whereas the Bay Area is the work location of many Lathrop residents, the majority of workers in the City reside in northern San Joaquin Valley counties.

## 1.4 REAL ESTATE TRENDS AND MARKET DEMAND

The following sections summarize current real estate market conditions in the City of Lathrop and San Joaquin County. The analysis draws on data from a number of sources, including housing characteristics from the U.S. Census Bureau and CoreLogic, a private data vendor, while information on real estate market statistics for retail, office, and industrial uses comes from CoStar, a private data vendor. Where appropriate, data and narrative from real estate market reports published by brokerages active in the market supplement the above sources.

### HOUSING STOCK CHARACTERISTICS

The City of Lathrop housing stock consists of almost exclusively single-family homes. As seen in Table 1.4-1, according to the 2012-2016 ACS, approximately 93.8 percent of homes in Lathrop are single-family, the bulk of which are detached units versus attached townhomes. Of the units considered multifamily, all of them are within structures containing between 2 and 4 units, indicating the city does not contain any medium or large multifamily complexes. In San Joaquin County, however, roughly 78.2 percent of homes are single-family units, while the inventory of multifamily units is fairly well distributed among medium and large multifamily complexes, with a particularly high percentage of medium complexes containing between 5 and 19 units. The City of Lathrop does have a slightly higher percentage of mobile homes relative to the County, accounting for roughly 4.3 percent of the units in Lathrop versus 3.4 percent countywide.

**TABLE 1.4-1: HOUSING UNIT CHARACTERISTICS - 2016**

TYPE OF RESIDENCE	CITY OF LATHROP		SAN JOAQUIN COUNTY	
	NUMBER	PERCENT	NUMBER	PERCENT
Single Family Detached	5,098	91.8%	173,443	73.0%
Single Family Attached	107	1.9%	12,370	5.2%
Multifamily 2-4 Units	85	1.5%	4,969	2.1%
Multifamily 5-19 Units	0	0.0%	26,407	11.1%
Multifamily 20-49 Units	0	0.0%	4,730	2.0%
Multifamily 50+	0	0.0%	7,390	3.1%
Mobile Homes	238	4.3%	8,110	3.4%
Other (a)	23	0.4%	333	0.1%
Total	5,551	100%	237,752	100%
Single Family Housing Units	5,205	93.8%	185,813	78.2%
Multifamily Housing Units	85	1.5%	43,496	18.3%

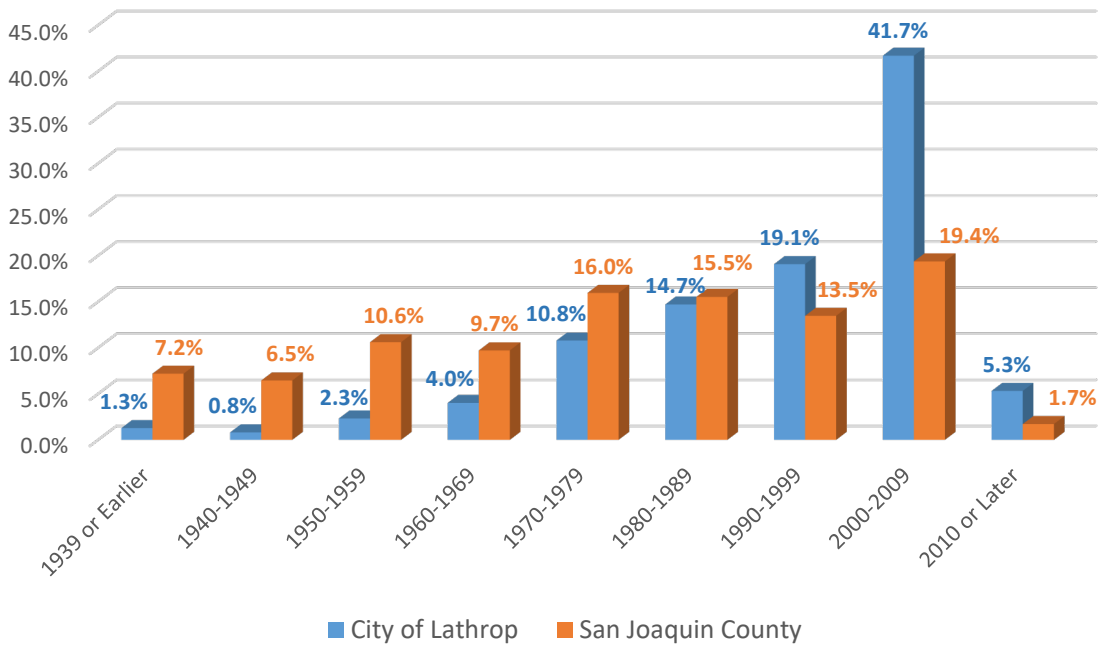
NOTES: (A) INCLUDES BOATS, RVs, VANS, OR ANY OTHER NON-TRADITIONAL RESIDENCES.

SOURCES: U.S. CENSUS BUREAU, AMERICAN COMMUNITY SURVEY 2012-2016 5-YEAR SAMPLE DATA, TABLE B25024; BAE, 2017.

### Age of Housing Stock

The inventory of housing within the City of Lathrop consists predominantly of newer housing units relative to San Joaquin County. As seen below in Chart 1.4-1, only 8.4 percent of the total housing stock in Lathrop was built prior to 1970 compared to 34 percent countywide. As a result of the lower share of older units, roughly 60.8 percent of the total Lathrop inventory was built between 1990 and 2009, versus just 32.8 percent countywide. The newest housing developments, including units built since 2010, represent roughly 5.3 percent of all Lathrop units, versus only 1.7 percent countywide.

**CHART 1.4-1: HOUSING UNITS BY YEAR BUILT, 2016**



SOURCES: U.S. CENSUS BUREAU, 2012-2016 ACS, TABLE 25034; BAE, 2017.

**Housing Occupancy Status**

Both the City of Lathrop and San Joaquin County boast fairly low vacancy rates. More specifically, the City of Lathrop and San Joaquin County have residential vacancy rates of 4.2 percent and 6.7 percent, respectively. Within the City, the largest share of vacant units are characterized as vacant for other reasons, while units for sale account for the second largest share of vacant units. Similarly, units characterized as vacant for other reasons account for the largest share of San Joaquin County units, followed by units currently for rent.

**TABLE 1.4-2: HOUSING OCCUPANCY AND VACANCY STATUS - 2016**

	NUMBER	PERCENT
<b>CITY OF LATHROP</b>		
<b>Occupied Units</b>	<b>5,320</b>	<b>95.8%</b>
<b>Vacant Units</b>	<b>231</b>	<b>4.2%</b>
For rent	24	0.4%
Rented, not occupied	18	0.3%
For sale only	41	0.7%
Sold, not occupied	23	0.4%
For seasonal, recreational, or occasional use	26	0.5%
For migrant workers	0	0.0%
Other vacant (a)	99	1.8%
<b>Total Vacant Housing Units</b>	<b>5,551</b>	<b>100%</b>
<b>SAN JOAQUIN COUNTY</b>		
<b>Occupied Units</b>	<b>221,707</b>	<b>93.3%</b>
<b>Vacant Units</b>	<b>16,045</b>	<b>6.7%</b>
For rent	4,816	2.0%
Rented, not occupied	809	0.3%

	NUMBER	PERCENT
For sale only	1,416	0.6%
Sold, not occupied	1,598	0.7%
For seasonal, recreational, or occasional use	1,113	0.5%
For migrant workers	87	0.0%
Other vacant (a)	6,206	2.6%
<b>Total Vacant Housing Units</b>	<b>237,752</b>	<b>100%</b>

NOTE: (A) INCLUDES UNITS VACANT FOR OTHER REASONS, SUCH AS PERSONAL REASONS OF THE OWNER, USE BY A CARETAKER OR JANITOR, AND BOARDED-UP UNITS NOT AVAILABLE FOR OCCUPANCY.

SOURCES: 2012-2016 AMERICAN COMMUNITY SURVEY, U.S. CENSUS BUREAU, TABLE B25004; BAE, 2017.

### For Sale Residential

Home Sale prices within the City of Lathrop were heavily impacted by the onset of the Great Recession. As seen in Table 1.4-3, median home prices prior to the Recession were just above \$500,000 in 2006, which quickly plummeted to just \$170,000 in 2011. Similarly, home prices over the same time period dropped from roughly \$430,000 to \$160,000 in San Joaquin County. As housing and economic conditions have improved, sale prices within both the City and County have increased at fairly stable rates. As of 2016, the median sale price of units within the City of Lathrop was approximately \$375,000, still well below the pre-recession level of \$500,000. The same is true for San Joaquin County, where the 2016 median sale price was roughly \$310,000, still below the 2006 peak median sale price of \$430,000.

**TABLE 1.4-3: HOME SALE PRICE TRENDS, 2006 TO 2016**

YEAR	CITY OF LATHROP		SAN JOAQUIN COUNTY	
	MEDIAN SALE PRICE	YR-TO-YR % CHANGE	MEDIAN SALE PRICE	YR-TO-YR % CHANGE
2006	\$508,000	-	\$432,500	-
2007	\$400,000	-21.3%	\$376,250	-13.0%
2008	\$240,000	-40.0%	\$214,000	-43.1%
2009	\$181,750	-24.3%	\$158,000	-26.2%
2010	\$195,000	7.3%	\$165,000	4.4%
2011	\$170,000	-12.8%	\$157,000	-4.8%
2012	\$195,000	14.7%	\$166,000	5.7%
2013	\$247,500	26.9%	\$215,000	29.5%
2014	\$305,000	23.2%	\$255,000	18.6%
2015	\$355,000	16.4%	\$281,000	10.2%
2016	\$375,000	5.6%	\$310,000	10.3%

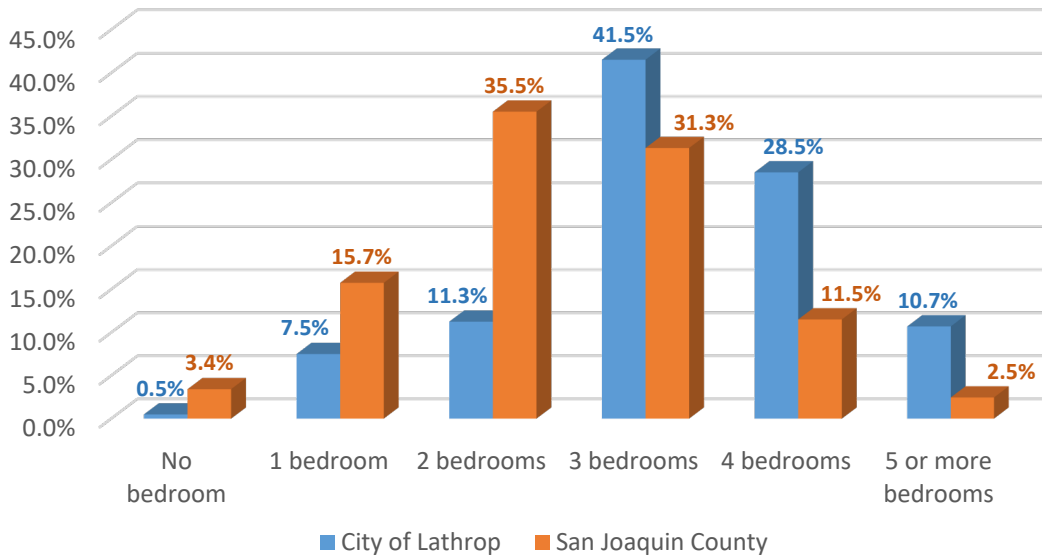
SOURCES: DQ NEWS; BAE, 2017.

## RENTAL RESIDENTIAL

### Rental Units by Size

Given that homes in the City are predominantly single-family residences, as noted above, Lathrop renter households typically occupy larger units relative to San Joaquin County renter households. As seen in Chart 1.4-2, the largest group of San Joaquin County renters occupy 2-bedroom units, while the largest group of Lathrop renters occupies 3-bedroom rental units.

**CHART 1.4-2: RENTAL UNITS BY NUMBER OF BEDROOMS, 2016**



SOURCES: U.S. CENSUS BUREAU, 2012-2016 ACS, TABLE 25042; BAE, 2017.

**Rental Rates**

Likely as a result of the larger rental units, City of Lathrop renters typically pay higher monthly rents relative to San Joaquin County renters. As seen in Table 1.4-4, the median gross rent in Lathrop was roughly \$1,600, compared to \$1,060 countywide. While roughly 45.6 percent of County renters pay less than \$1,000 for rent, the same rental rate accounts for just 15.6 percent of Lathrop renters, indicating a lack of market-rate affordable units. On the other hand, renters paying between \$1,500 and \$1,999 account for the largest share of Lathrop renters (39.1 percent), with an additional 18.9 percent paying \$2,000 or more in monthly rent.







**TABLE 1.4-4: GROSS RENT - 2016**

RENT	CITY OF LATHROP		SAN JOAQUIN COUNTY	
	NUMBER	PERCENT	NUMBER	PERCENT
Less than \$500	34	2.2%	5,628	6.0%
\$500-\$999	208	13.4%	37,097	39.6%
\$1,000 to \$1,499	408	26.4%	30,780	32.9%
\$1,500 to \$1,999	606	39.1%	14,217	15.2%
\$2,000 to \$2,499	239	15.4%	4,484	4.8%
\$2,500 or More	53	3.4%	1,414	1.5%
<b>Total, Renters</b>	<b>1,548</b>	<b>100%</b>	<b>93,620</b>	<b>100%</b>
<b>Median Rent</b>	<b>\$1,602</b>		<b>\$1,057</b>	

SOURCES: U.S. CENSUS BUREAU, AMERICAN COMMUNITY SURVEY 2012-2016 5-YEAR SAMPLE DATA, TABLES B25063 & B25064; BAE, 2017.

To supplement the available Census data, Table 1.4-5 displays information for a select number of active rental listings. As seen in the table, the available rental units are all single-family residences, and have at least three bedrooms. Monthly rental rates range from \$1,650 to \$2,800, with the rent per square foot ranging from \$0.90 to \$1.35 per month.

**TABLE 1.4-5: CURRENT RENTAL LISTINGS, DECEMBER 2017**

Image	Address	Unit Type	Square Feet	Monthly Rent	Rent/Sq Ft
	1027 Greengate Place Lathrop, CA	5 BR / 3 Bath	2,800	\$2,800	\$1.00
	1627 Huntington Way Lathrop, CA	4 BR / 3.5 Bath	2,868	\$2,650	\$0.92
	756 Historic Ave Lathrop, CA	5 BR / 3.5 Bath	2,385	\$2,200	\$0.92
	280 Thomsen Road Lathrop, CA	4 BR / 2.5 Bath	2,160	\$1,950	\$0.90
	13698 Rosewood Street Lathrop, CA	3 BR / 2 Bath	1,365	\$1,849	\$1.35
	349 Osage Place Lathrop, CA	4 BR / 2 Bath	1,398	\$1,650	\$1.18

**RETAIL MARKET TRENDS**

While the total inventory of retail space within the City of Lathrop is fairly minimal, the general vacancy and absorption trends suggest it is a fairly healthy market. For example, as shown in Table 1.4-6, the City of Lathrop contains roughly 390,000 square feet, which only amounts to 1.3 percent of the total San Joaquin County retail inventory. That said, only 1,200 square feet of the total Citywide inventory remains vacant, indicating a vacancy rate of just 0.3 percent. Similarly, the City has absorbed roughly 35,000 square feet since 2010, 5,000 of which was absorbed in the first three quarters of 2017. Though quite small, CoStar indicates that roughly 3,000 square feet of retail was delivered in 2016, followed by 2,000

## 1.0 LAND USE AND SOCIOECONOMICS

square feet in the first three quarters of 2017. While rents appear to be higher than San Joaquin County as a whole, given the small inventory, these figures must be interpreted with caution. Despite this, it appears that rents are at least similar to the countywide rates, suggesting existing retail tenants are able to support moderately high rents. Despite the declining success of the retail sector, it appears Lathrop may be well positioned to capture additional retail demand from new tenants as the City continues to build out.

**TABLE 1.4-6: RETAIL MARKET OVERVIEW, CITY OF LATHROP AND SAN JOAQUIN COUNTY, Q3 2017**

	CITY OF LATHROP		SAN JOAQUIN COUNTY	
<b>Summary, Q3 2017</b>				
Inventory	391,473	sq. ft.	31,016,862	sq. ft.
Occupied Stock	390,273	sq. ft.	29,985,734	sq. ft.
Vacant Stock	1,200	sq. ft.	1,031,128	sq. ft.
Vacancy Rate	0.3%		4.7%	
Inventory (% of San Joaquin County)	1.3%			
<b>Asking Rents (a)</b>				
Avg Asking Rent, NNN, Q3 2016	\$1.75	per sq. ft.	\$1.33	per sq. ft.
Avg Asking Rent, NNN, Q3 2017	\$1.75	per sq. ft.	\$1.30	per sq. ft.
% Change	0.0%		-2.3%	
<b>Net Absorption</b>				
Net Absorption 2010 - 2017	34,249	sq. ft.	2,879,282	sq. ft.
Net Absorption, 2017 YTD	5,150	sq. ft.	344,736	sq. ft.
<b>New Activity (b)</b>				
New Construction, 2016	3,000	sq. ft.	344,326	sq. ft.
New Construction, 2017 YTD	2,000	sq. ft.	21,031	sq. ft.

**NOTES:**

(A) AVERAGE ASKING RENTS REFLECT A TRIPLE NET (NNN) LEASE WHERE THE TENANT TO PAYS ALL REAL ESTATE TAXES, BUILDING MAINTENANCE, AND INSURANCE ON THE PROPERTY, IN ADDITION TO RENT, UTILITIES, AND OTHER EXPENSES.

(B) REFLECTS NEW CONSTRUCTION BASED ON PROPERTIES TRACKED BY CoSTAR.

SOURCES: CoSTAR; BAE, 2017.

## TAXABLE SALES

As shown in Table 1.4-7, according to the California State Board of Equalization (SBOE), the largest share of taxable sales within the City of Lathrop come from Gasoline Stations, which account for roughly \$52 million in annual taxable sales or 20.4 percent of total sales. The second largest taxable sales within Lathrop come from Motor Vehicle and Parts Dealers, which generate roughly \$40 million in total taxable sales, or 15.3 percent of total sales. In addition, while data for General Merchandise Stores, which include stores like Target and Walmart, are suppressed for confidentiality purposes, the sales are included in the “Other Retail Group” which in total only account for 10.3 percent of sales, only marginally higher than the San Joaquin Other Retail Group without General Merchandise Stores. In total, the City of Lathrop had roughly \$255 million in total taxable sales, which amounts to roughly \$12,400 per resident which is modestly below the countywide per capita sales rate of \$14,500.



**TABLE 1.4-7: TAXABLE SALES - 2015**

CATEGORY	CITY OF LATHROP			SAN JOAQUIN COUNTY		
	SALES	PERCENT	PER CAPITA (A)	SALES	PERCENT	PER CAPITA (A)
Motor Vehicle and Parts Dealers	\$39,219,149	15.3%	\$1,894	\$1,397,121,003	13.3%	\$1,930
Furnishings and Appliance Stores	(b)	n.a.	n.a.	\$419,046,226	4.0%	\$579
Bldg. Matrl. and Garden Equipment	\$20,261,947	7.9%	\$978	\$633,220,272	6.0%	\$875
Food and Beverage Stores	\$8,097,203	3.2%	\$391	\$424,288,165	4.1%	\$586
Gasoline Stations	\$52,315,427	20.4%	\$2,526	\$1,069,106,361	10.2%	\$1,477
Clothing and Clothing Accessories	\$160,706	0.1%	\$8	\$325,818,044	3.1%	\$450
General Merchandise Stores	(b)	n.a.	n.a.	\$1,071,139,758	10.2%	\$1,480
Food Services and Drinking Places	\$20,466,711	8.0%	\$988	\$840,597,583	8.0%	\$1,161
Other Retail Group	\$26,353,758	10.3%	\$1,273	\$806,540,409	7.7%	\$1,114
<b>Subtotal, All Retail and Food</b>	<b>\$166,874,901</b>	<b>65.0%</b>	<b>\$8,058</b>	<b>\$6,986,877,821</b>	<b>66.8%</b>	<b>\$9,651</b>
<b>All Other Outlets</b>	<b>\$89,740,764</b>	<b>35.0%</b>	<b>\$4,333</b>	<b>\$3,480,336,018</b>	<b>33.2%</b>	<b>\$4,807</b>
<b>Total, All Outlets</b>	<b>\$256,615,665</b>	<b>100%</b>	<b>\$12,392</b>	<b>\$10,467,213,839</b>	<b>100%</b>	<b>\$14,458</b>

NOTE:

(A) BASED ON 2015 POPULATION ESTIMATES PUBLISHED BY THE DEPARTMENT OF FINANCE.

(B) DATA WITHHELD FOR CONFIDENTIALITY. TAXABLE SALES IN THESE CATEGORIES ARE INCLUDED IN THE "OTHER RETAIL GROUP" CATEGORY.

SOURCES: CALIFORNIA STATE BOARD OF EQUALIZATION, 2017; CALIFORNIA DEPARTMENT OF FINANCE, 2017; BAE, 2017.

## RETAIL LEAKAGE ANALYSIS

In order to assess the net balance of trade in the retail sector, BAE compiled data on retail sales and consumer expenditures from Esri, a private data vendor, including both the City of Lathrop and San Joaquin County. As reported in Table 1.4-8, City of Lathrop residents spend a total of roughly \$228 million in retail purchases in 2017. This corresponded with approximately \$208 million in retail sales within the City limit, resulting in an estimated leakage of almost \$20 million in retail sales. San Joaquin County, by contrast, experienced a net injection of roughly \$260 Million.

With respect to the major sales categories that experienced more sales than demand from consumers within the City of Lathrop, Gasoline Stations, Food and Beverage Stores, and Building Material and Garden Equipment account for the retail categories with the largest injection of sales. Conversely, the City of Lathrop experienced significant leakage in almost every other retail category, principally in Clothing and Clothing Accessories Stores, Electronics and Appliance Stores, Sporting Goods, Hobby, Book, and Music Stores, and Health and Personal Care Stores. While the data suggest a large leakage in Motor Vehicle and Parts Dealers, those businesses typically need to occupy large sites in order to achieve the appropriate economies of scale, thus the leakage within the City of Lathrop is likely spurred by the limited population density and demand. However, San Joaquin County as a whole also shows significant leakage in Motor Vehicle and Parts Dealers, which may indicate a potential opportunity for Lathrop moving forward.

Based on the Urban Land Institute’s average sales per square foot by sales category estimates, the retail leakage sales indicate that the City of Lathrop has additional demand for roughly 180,000 square feet of various retail stores. In general, the retail categories with the most significant supportable square footage are resident-serving retail types, including Clothing and Clothing Accessory stores, Sporting Goods, Hobby, Book, and Music Stores, Furniture and Home Furnishings Stores, and Electronics and Appliance Stores. Countywide, these retail categories also experience the largest amount of leakage and account for a large amount of supportable square footage. It is also worth noting that general merchandise stores, encompassing stores like Target and Walmart, tend to include items sold at the stores that experience a notable amount of leakage in the City and County, which is likely impacting the leakage estimates.

## 1.0 LAND USE AND SOCIOECONOMICS

**TABLE 1.4-8: RETAIL LEAKAGE ANALYSIS, CITY OF LATHROP, 2017 (PAGE 1 OF 2)**

City of Lathrop					
Retail Category	Consumer Expenditures	Retail Supply	(Leakage)/ Injection	Estimated Sales/SF (a)	Supportable Square Feet (b)
Furniture and Home Furnishings Stores	\$7,769,000	\$2,268,403	(\$5,500,597)	\$209	26,283
Electronics and Appliance Stores	\$7,772,417	\$241,244	(\$7,531,173)	\$302	24,921
Building Material, Garden Equip Stores	\$12,494,111	\$20,221,348	\$7,727,237	\$389	n.a.
Food and Beverage Stores	\$32,743,803	\$46,372,244	\$13,628,441	\$412	n.a.
Health and Personal Care Stores	\$13,603,266	\$7,570,760	(\$6,032,506)	\$429	14,059
Clothing and Clothing Accessories Stores	\$14,805,330	\$0	(\$14,805,330)	\$233	63,630
Sporting Goods, Hobby, Book, Music Stores	\$6,644,117	\$535,765	(\$6,108,352)	\$220	27,784
General Merchandise Stores	\$34,389,950	\$35,509,231	\$1,119,281	\$150	n.a.
Miscellaneous Store Retailers	\$7,478,301	\$1,200,274	(\$6,278,027)	\$248	25,363
Non-Store Retailers	\$5,814,712	\$334,071	(\$5,480,641)	n.a.	n.a.
Food Service and Drinking Places	\$22,504,440	\$23,432,049	\$927,609	\$314	n.a.
<b>Subtotal, Non-Automotive</b>	<b>\$166,019,447</b>	<b>\$137,685,389</b>	<b>(\$28,334,058)</b>		<b>182,041</b>
Retail Category	Consumer Expenditures	Retail Supply	(Leakage)/ Injection	Estimated Sales/Acre (c)	Supportable Acreage (c)
Motor Vehicle and Parts Dealers	\$42,902,287	\$23,106,792	(\$19,795,495)	\$12,634,000	1.6
Gasoline Stations	\$18,702,708	\$47,307,183	\$28,604,475	\$5,806,423	n.a.
<b>Subtotal, Automotive</b>	<b>\$61,604,995</b>	<b>\$70,413,975</b>	<b>\$8,808,980</b>		<b>1.6</b>
<b>Net Balance of Trade</b>	<b>\$227,624,442</b>	<b>\$208,099,364</b>	<b>(\$19,525,078)</b>		
<i>Categories with Leakage</i>	\$63,887,143	\$12,150,517	(\$51,736,626)		

- Continued next page-

SOURCES: ESRI, 2017; ULI, 2008; SBOE, 2017; BAE, 2017

# 1.0 LAND USE AND SOCIOECONOMICS

**TABLE 1.4-8: RETAIL LEAKAGE ANALYSIS, CITY OF LATHROP, 2017 (PAGE 2 OF 2)**

San Joaquin County					
<u>Retail Category</u>	<u>Consumer Expenditures</u>	<u>Retail Supply</u>	<u>(Leakage)/ Injection</u>	<u>Estimated Sales/SF (a)</u>	<u>Supportable Square Feet (b)</u>
Furniture and Home Furnishings Stores	\$286,401,177	\$179,629,377	(\$106,771,800)	\$209	510,186
Electronics and Appliance Stores	\$282,464,652	\$124,386,929	(\$158,077,723)	\$302	523,090
Building Material, Garden Equip Stores	\$475,973,324	\$694,693,842	\$218,720,518	\$389	n.a.
Food and Beverage Stores	\$1,235,752,544	\$1,512,903,894	\$277,151,350	\$412	n.a.
Health and Personal Care Stores	\$527,977,827	\$459,290,346	(\$68,687,481)	\$429	160,085
Clothing and Clothing Accessories Stores	\$542,042,219	\$290,469,809	(\$251,572,410)	\$233	1,081,195
Sporting Goods, Hobby, Book, Music Stores	\$243,065,012	\$184,063,074	(\$59,001,938)	\$220	268,374
General Merchandise Stores	\$1,281,957,850	\$1,914,987,002	\$633,029,152	\$150	n.a.
Miscellaneous Store Retailers	\$287,337,162	\$179,839,934	(\$107,497,228)	\$248	434,280
Non-Store Retailers	\$221,812,357	\$146,291,985	(\$75,520,372)	n.a.	n.a.
Food Service and Drinking Places	\$828,741,020	\$730,680,861	(\$98,060,159)	\$314	312,174
<b>Subtotal, Non-Automotive</b>	<b>\$6,213,525,144</b>	<b>\$6,417,237,053</b>	<b>\$203,711,909</b>	<b>\$0</b>	<b>3,289,383</b>

<u>Retail Category</u>	<u>Consumer Expenditures</u>	<u>Retail Supply</u>	<u>(Leakage)/ Injection</u>	<u>Estimated Sales/Acre (c)</u>	<u>Supportable Acreage (c)</u>
Motor Vehicle and Parts Dealers	\$1,624,890,005	\$1,406,576,721	(\$218,313,284)	\$12,634,000	17.3
Gasoline Stations	\$690,805,691	\$963,172,670	\$272,366,979	\$5,806,423	n.a.
<b>Subtotal, Automotive</b>	<b>\$2,315,695,696</b>	<b>\$2,369,749,391</b>	<b>\$54,053,695</b>		<b>17.3</b>

<b>Net Balance of Trade</b>	<b>\$8,529,220,840</b>	<b>\$8,786,986,444</b>	<b>\$257,765,604</b>		
<i>Categories with Leakage</i>	<i>\$3,219,841,426</i>	<i>\$2,294,652,315</i>	<i>(\$925,189,111)</i>		

**Notes:**

- (a) Sales per square foot are based on data reported in the Dollars and Cents of Shopping Centers, published by the ULI.
- (b) Supportable square footage estimates include a 14 percent non-retail adjustment and a 10 percent vacancy allowance.
- (c) Sales per acre estimates are based on taxable sales per establishment figures derived from data published by the SBOE. The figures assume that an average motor vehicle dealership will range in size between 5.3 and 6.4 acres, while a typical gasoline station would occupy approximately one acre.

SOURCES: ESRI, 2017; ULI, 2008; SBOE, 2017; BAE, 2017.

OFFICE MARKET TRENDS

The City of Lathrop contains roughly 375,000 square feet of office space, which accounts for approximately 3.0 percent of the total San Joaquin County office inventory. Of the total Lathrop inventory, roughly 26,000 is currently vacant, resulting in a 7.0 percent vacancy rate, which is similar to the San Joaquin County vacancy rate of 6.6 percent. Between 2010 and 2017, the City absorbed roughly 40,000 square feet of office space, of which approximately 7,500 square feet occurred specifically in the first three quarters of 2017. As seen in Table 1.4-9, there has been no new office development over the past two years in the City of Lathrop, in fact the last major office development occurred in 2009. As noted above, the rental rates are to be interpreted with some caution, but the most recent data suggest average asking rents for Office space within the City of Lathrop are similar to the San Joaquin County rate.

**TABLE 1.4-9: OFFICE MARKET OVERVIEW, CITY OF LATHROP AND SAN JOAQUIN COUNTY, Q3 2017**

	CITY OF LATHROP		SAN JOAQUIN COUNTY	
<b>Summary, Q3 2017</b>				
Inventory	373,247	sq. ft.	12,471,464	sq. ft.
Occupied Stock	347,247	sq. ft.	11,653,399	sq. ft.
Vacant Stock	26,000	sq. ft.	818,065	sq. ft.
Vacancy Rate	7.0%		6.6%	
Inventory (% of San Joaquin County)	3.0%			
<b>Asking Rents (a)</b>				
Avg Asking Rent, Full Service Gross, Q3 2016	\$0.90	per sq. ft.	\$1.18	per sq. ft.
Avg Asking Rent, Full Service Gross, Q3 2017	\$1.42	per sq. ft.	\$1.35	per sq. ft.
% Change	57.8%		14.4%	
<b>Net Absorption</b>				
Net Absorption 2010 - 2017	40,300	sq. ft.	738,823	sq. ft.
Net Absorption, 2017 YTD	7,511	sq. ft.	454,516	sq. ft.
<b>New Activity (b)</b>				
New Construction, 2016	0	sq. ft.	0	sq. ft.
New Construction, 2017 YTD	0	sq. ft.	318,960	sq. ft.

NOTES:

(A) AVERAGE ASKING RENTS REFLECT A FULL SERVICE GROSS LEASE, WHERE ALL MAJOR EXPENSES, LIKE REAL ESTATE TAXES, BUILDING MAINTENANCE, INSURANCE, AND UTILITIES, ARE INCLUDED IN THE BASE RENTAL RATE.

(B) REFLECTS NEW CONSTRUCTION BASED ON PROPERTIES TRACKED BY CoSTAR.

SOURCES: CoSTAR; BAE, 2017.

## 1.0 LAND USE AND SOCIOECONOMICS

### INDUSTRIAL MARKET TRENDS

According to CoStar, the City of Lathrop contains roughly 11.7 million square feet of industrial space, which accounts for 10.6 percent of the San Joaquin County inventory, the largest share of countywide industrial space. Of the total square footage, approximately 815,000 square feet are currently vacant, yielding a citywide vacancy rate of 7.0 percent. Countywide, the vacancy rate is just 3.7 percent, indicating likely pent up demand for additional industrial space given the County's location along major transportation networks. Since 2010, the City of Lathrop has absorbed approximately 635,000 square feet of industrial space, and roughly 100,000 square feet just in the first three quarters of 2017.<sup>1</sup> In terms of new construction, the City received roughly 750,000 square feet of new industrial space in 2016, followed by 520,000 square feet in the first three quarters of 2017. Additional data from CoStar indicate that the City has roughly 1.2 million square feet currently under construction, suggesting industrial users are continuing to create demand for additional industrial space within the City and County. With respect to rents, industrial space within the City appears to be yielding slightly higher rates, relative to the County as a whole. The most recent data for the third quarter of 2017 suggest the average asking rents for industrial space is roughly \$0.50 per square foot, notably above the countywide rate of \$0.39.

**TABLE 1.4-10: INDUSTRIAL MARKET OVERVIEW, CITY OF LATHROP AND SAN JOAQUIN COUNTY, Q3 2017**

	CITY OF LATHROP		SAN JOAQUIN COUNTY	
<b>Summary, Q3 2017</b>				
Inventory	11,660,486	sq. ft.	109,553,472	sq. ft.
Occupied Stock	10,842,093	sq. ft.	105,500,448	sq. ft.
Vacant Stock	818,393	sq. ft.	4,053,024	sq. ft.
Vacancy Rate	7.0%		3.7%	
Inventory (% of San Joaquin County)	10.6%			
<b>Asking Rents (a)</b>				
Avg Asking Rent, NNN (per sq. ft.), Q3 2016	\$0.39	per sq. ft.	\$0.37	per sq. ft.
Avg Asking Rent, NNN (per sq. ft.), Q3 2017	\$0.50	per sq. ft.	\$0.39	per sq. ft.
% Change	28.2%		5.4%	
<b>Net Absorption</b>				
Net Absorption, 2010 - 2017	634,311	sq. ft.	18,874,421	sq. ft.
Net Absorption, 2017 YTD	97,535	sq. ft.	211,360	sq. ft.
<b>New Activity (b)</b>				
New Construction, 2016	749,100	sq. ft.	2,216,100	sq. ft.
New Construction, 2017 YTD	518,200	sq. ft.	1,434,726	sq. ft.

**NOTES:**

(A) AVERAGE ASKING RENTS REFLECT A TRIPLE NET (NNN) LEASE WHERE THE TENANT TO PAYS ALL REAL ESTATE TAXES, BUILDING MAINTENANCE, AND INSURANCE ON THE PROPERTY, IN ADDITION TO RENT, UTILITIES, AND OTHER EXPENSES.

(B) REFLECTS NEW CONSTRUCTION BASED ON PROPERTIES TRACKED BY CoSTAR.

SOURCES: CoSTAR; BAE, 2017.

<sup>1</sup> Absorption is the amount of space or units leased within a market or submarket over a given period of time. Lease renewals are not factored into absorption unless the renewal includes the occupancy of additional space. (In that case, the additional space would be counted in absorption.) Pre-leasing of space (e.g., Proposed, Under Construction, Under Renovation) is not counted in absorption until the actual move-in date.

## 1.5 FISCAL CONDITIONS

This section contains information about existing fiscal conditions in the City of Lathrop, including General Fund operating revenue sources and operating expenditures. The objective is to provide General Plan update participants, including the public, the consultant team, City staff, and City policymakers with a common understanding of how the City of Lathrop spends its General Fund monies at present, how those monies are generated, and the implications for planning for development in the City of Lathrop over the next 20 to 25 years. Considering these factors as part of the General Plan Update process will help to ensure that the City maintains a fiscally sustainable budget in addition to high quality services for residents and businesses as the community experiences potentially significant growth. This section focuses on the revenues and expenditures that comprise the City's General Fund, as this is the part of the overall City Budget that receives the City's most important discretionary revenues, and which funds critical public services, such as public safety and parks and community services. In addition, this section outlines Measure C revenue and expenditures, as this source funds essential City services but is discrete from the General Fund.

### REGULATORY FRAMEWORK

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#### *LOCAL*

#### **Municipal Budget**

The City adopts a Municipal Biennial Budget. The Municipal Biennial Budget is a two year spending plan which serves as the legal authority for City divisions to commit and spend financial resources. The Budget also represents the implementation plan for executing the City Council's goals, policies, and objectives for the upcoming year.

### EXISTING GENERAL FUND CONDITIONS

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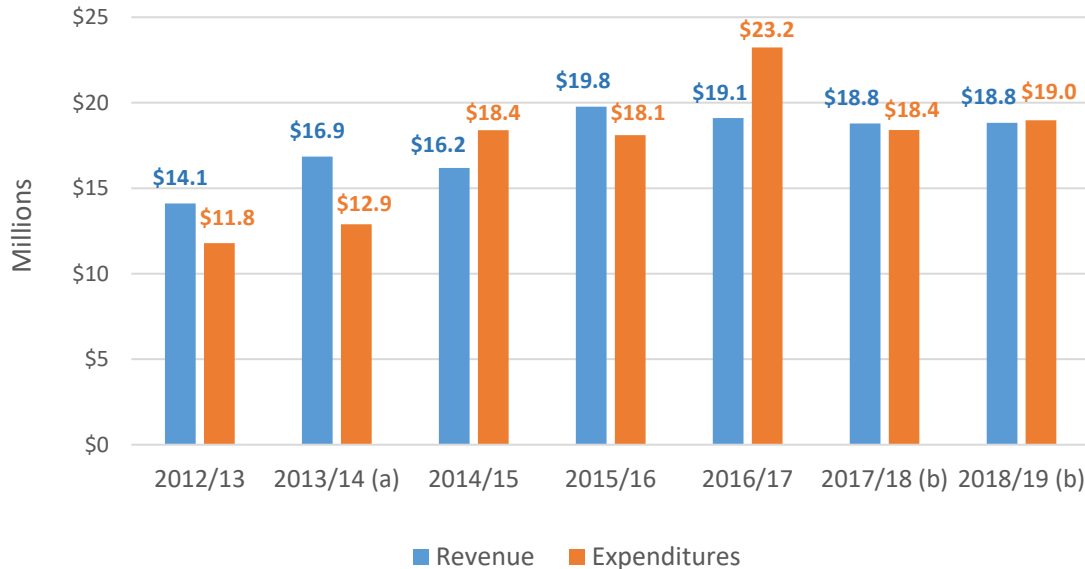
Given the relatively small but growing population within the City of Lathrop, General Fund Revenues and Expenditures fluctuate somewhat significantly depending on the needs of the City. The most prominent example of this is seen during years of major developments, in which both revenues and expenditures increase significantly. On the revenue side, increases are due to income generated by various departments for charges for services including plan check fees, inspection fees, and building permit fees. In order to adequately address the needs of the major developments, including monitoring plans and ensuring adequate administrative approval times, General Fund expenditures increase, principally within the Public Works and Community Development departments.

As seen below in Chart 1.5-1, the City of Lathrop has fared well during the recovery from the Great Recession, with General Fund Revenues exceeding the anticipated expenditures in the Fiscal Years of 2012/2013 and 2013/2014. In 2014/2015, expenditures exceeded revenue, however upon additional review of individual line items within the budget, it is clear this was a one-time payment within the Central Services division to begin funding an Other Post Retirement Benefit (OPEB) Trust Fund. Fiscal Year 2015/2016 included a large spike in General Fund revenue, largely driven by Current Service Charges and an increase in Transfers into the General Fund, concurrent with a drop in total expenditures, indicating a \$1.7 million operating surplus. In fiscal year 2016/17, however, General Fund expenditures substantially exceeded revenues, principally due to a nearly \$3 million increase in Public Works expenditures as development within the City increased. While the budgets for FY 2017/2018 and 2018/2019 are only preliminary and likely moderately conservative, these project that General Fund revenues will slightly exceed expenditures in FY 2017/2018, however the City anticipates that expenditures will exceed revenue

## 1.0 LAND USE AND SOCIOECONOMICS

in FY 2018/2019, indicating the importance of increasing revenues while maintaining expenditures long-term.

**CHART 1.5-1: GENERAL FUND REVENUE AND EXPENDITURE TRENDS, FY 2012/13 TO FY 2018/19**



**NOTES:**

(A) MEASURE C DOLLARS THAT WERE INCLUDED IN THE 2013/14 GENERAL FUND REVENUE WERE EXCLUDED IN THE CHART GIVEN IN SUBSEQUENT YEARS, MEASURE C IS INCLUDED IN A DIFFERENT FUND.

(B) REFLECT GENERAL FUND REVENUE AND EXPENDITURES IN RECOMMENDED BUDGETS.

SOURCES: CITY OF LATHROP FINANCE DEPARTMENT, CITY BUDGETS, YEARS AS NOTED; BAE, 2017.

### Current General Fund Revenues

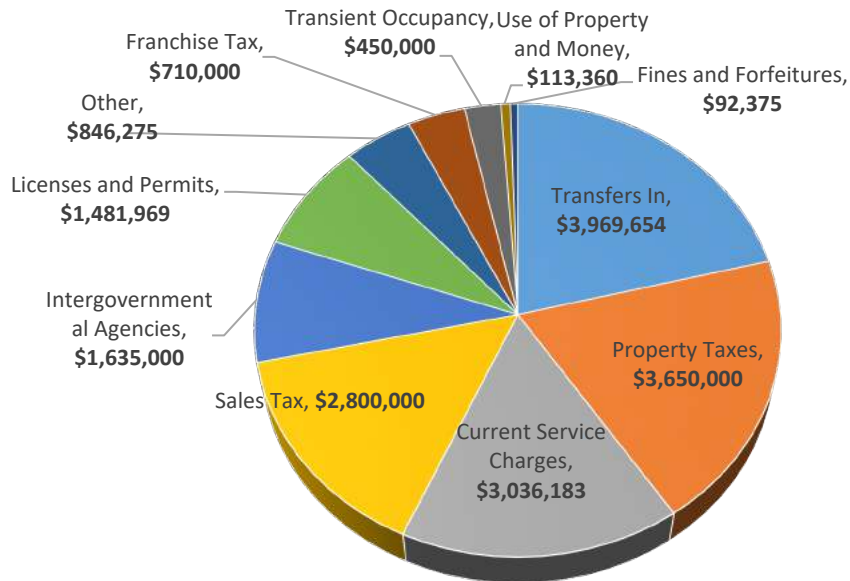
The City of Lathrop relies on various ongoing revenue sources to balance its General Fund budget. As shown below in Chart 1.5-2, the most significant of these revenue sources is from Transfers In from other funds. Transfers In include revenues from other funds that pay their share of General Fund Expenses. In addition to Transfers In, the major revenue items include:

- 1) Property Tax
- 2) Current Service Charges
- 3) Sales Tax
- 4) Intergovernmental Agencies (Mainly Property Tax In Lieu of Vehicle License Fee)
- 5) Licenses and Permits

Together, these items (including Transfers In) account for 88 percent of the total General Fund revenue budgeted in Fiscal Year 2017/2018.



**CHART 1.5-2: GENERAL FUND REVENUE SOURCES, FY 2017/2018**



SOURCES: CITY OF LATHROP, FISCAL YEAR 2017/18 AND 2018/19 PROPOSED BUDGET; BAE, 2017

**Transfers In**

Transfers into the General Fund account for the largest revenue source, accounting for roughly \$4.0 million in FY 2017/18. According to the City budget, and additional discussion with City staff, the transfers in are predominantly indirect cost reimbursements for support services. For example, roughly \$1.0 million is transferred into the General Fund from the Water Fund, which collects potable water service charges from residents and businesses. In addition, the City transfers roughly \$600,000 into the General Fund from the Wastewater Fund, with another \$500,000 from the Recycled Water Fund. In addition to water and sewage fees, another funding source is the Mossdale Community Facilities District (CFD) and the River Islands Community Services District (CFD), which implements a fee on each residential unit within the development. The purpose of the CFD is to offset City service costs; therefore, a portion of the revenue is transferred to the General Fund. Besides the above sources of transfers into the General Fund, a number of other smaller funds transfer money into the General Fund, to reimburse for service provision by various City departments.

**Property Tax**

Property Tax revenue is the General Fund’s second largest revenue source, amounting to approximately \$3.65 million, or 19.4 percent of the total General Fund revenue. Since FY 2012/2013, property tax revenue has increase by \$875,000 representing an increase of roughly 31.4 percent over that time frame. This is likely driven partly by increasing housing prices, but most significantly by the recent increase in new housing development throughout the City required to pay the designated property tax.

**Current Service Charges**

Current charges for service within the City of Lathrop account for another significant General Fund revenue source, accounting for 16.2 percent, or \$3.0 Million, of the total General Fund revenue in FY 2017/18. The largest portion of current service charges are generated within the Public Works

## 1.0 LAND USE AND SOCIOECONOMICS

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Department for items including Inspection Fees and Plan Check Fees, suggesting the revenue is highly connected to new housing development applications and construction. In FY 2012/13, charges for service amounted to \$1.5 million, however by FY 2016/2017 these revenues increased to \$3.6 million. In the most recent budget year, FY 2017/18, the City's Finance Department estimates this revenue will decrease from the previous year, down to \$3.0 million, largely driven by decreases in anticipated revenue from inspection and plan checks within the River Islands development.

### **Sales Tax**

#### **Sales Tax**

The City's recent annexations coupled with a surge in industrial facility additions and expansions have generated both long-term and short-term additions to Sales Tax revenue. For example, in FY 2012/13, the City received approximately \$3.1 million in sales tax, which accounted for the second largest General Fund revenue item. Since 2012/2013, actual sales tax revenue has increased to an estimated \$4.2 million in the 2017/2018 Fiscal Year. While the City did pass Measure C which places an additional one percent tax on sales within the City of Lathrop in 2012, this added revenue is not directed straight into the General Fund, but rather into a specific Measure C fund that helps fund police and other essential city services. Measure C is discussed below.

### **Intergovernmental Agencies**

Intergovernmental agency revenue is generally revenue the City receives from the State of California for a number of items. The vast majority of the revenue subvented to the City from the State is in the form of the In Lieu of Vehicle License Fee (ILVLF) payment, which in 2017/18 accounts for 96 percent of the total intergovernmental agency revenue. In general, Intergovernmental agency revenue has steadily increased relative to FY 2012/13, though at a fairly slow rate. For example, Intergovernmental agency revenue amounted to approximately \$1.2 million in FY 2012/13, and has since increased to an estimated \$1.6 million in FY 2017/18, representing an increase of roughly 32 percent.

### **Licenses and Permits**

License and permit fee revenue accounts another significant portion of General Fund revenue, and represents the revenue item that has experienced the most significant growth since the 2012/13 Fiscal Year. For example, license and permit revenue amounted to roughly \$635,000 in FY 2012/13 and has since increased to an estimated \$1.5 million in FY 2017/18, more than doubling over the time frame. Upon additional analysis of the budget, it is evident that the majority of license and permit revenue is generated by Construction Permits, roughly half of which are associated with the River Island development. This revenue source is tied to the amount of construction occurring in the City and thus is highly susceptible to changes in market conditions.

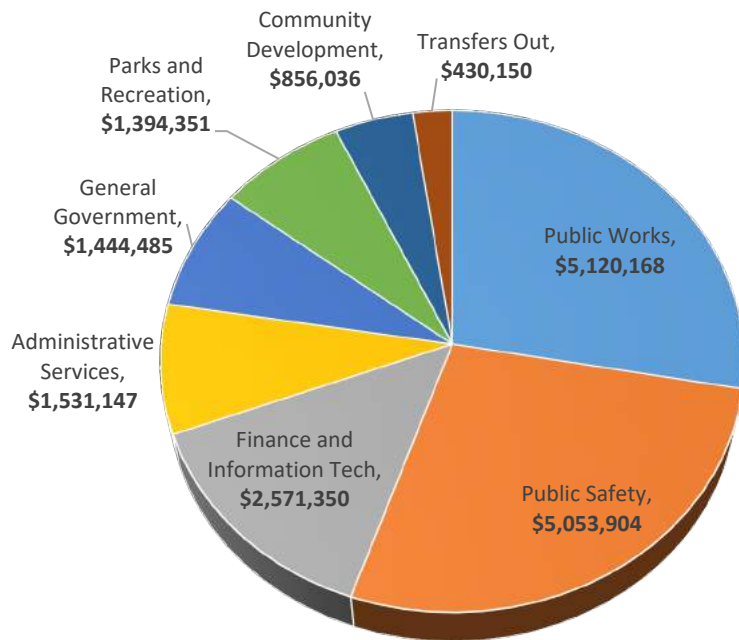
## CURRENT GENERAL FUND EXPENDITURES

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In the 2017/2018 Fiscal Year Budget, total General Fund expenditures were set to equal \$18.4 million, of which public works and public safety comprised the largest shares. As seen in Chart 1.5-3 below, the Public Works department accounted for roughly \$5.1 million in expenditures, while Public Safety, including police service, amounted to \$5.05 million in total expenditures, both accounting for roughly 28 percent of total General Fund expenditures. In addition to Public Works and Public Safety, the Finance and Information Tech department accounted for \$2.6 million in expenditures, or roughly 14 percent of the total expenditures. The Administrative Services Department, General Government, and Parks and Recreation all account for approximately \$1.4 to \$1.5 million in total expenditures, all roughly equal to

eight percent of all expenditures. Lastly, the Community Development Department accounts for the smallest amount of expenditures, at roughly \$860,000 or 4.7 percent. Transfers out of the General Fund have varied over the past several years, but in the 2017/18 budget, the City anticipates transferring roughly \$430,000 out of the General Fund for other department expenditures.

**CHART 1.5-3: GENERAL FUND EXPENDITURES, FY 2017/18**



SOURCES: CITY OF LATHROP, FISCAL YEAR 2017/18 AND 2018/19 PROPOSED BUDGET; BAE, 2017

**Public Works**

As noted above, the Public Works department accounts for the largest total expenditure within the City of Lathrop General Fund budget. Since the 2012/13 Fiscal Year, expenditures within the department have increased significantly, driven mostly by the increase in development, which spurs the need for construction project plan checks and inspections. For example, while the Public Works department expenditures amounted to \$2.5 million in FY 2012/13, the anticipated total expenditures for 2017/18 amount to over \$5.1 million, roughly doubling the departmental expenditures. This is largely due to the transfer of the Building Department from Community Development to Public Works. The FY 2017/18 Building budget is \$1.3 million. Despite the general increase in expenditures, it is also worth noting that the Public Works department expenditures for the previous year (FY 2016/17) amounted to over \$5.7 million, indicating that the expenditures fluctuate significantly, depending on the needs within the City. As Lathrop continues to build out, it will be important to ensure that the Public Works department has adequate personnel (City employees or contractors) to meet the needs of the development community without being over-staffed during cyclical periods of more limited demand.

**Public Safety**

The City contracts with the San Joaquin County Sheriff’s Department for police services. Based on historic spending trends on Public Safety, all under similar agreements with the County Sheriff’s Department, costs

## 1.0 LAND USE AND SOCIOECONOMICS

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have increased 54% citywide since FY 2012/13. In addition to the General Fund, Public Safety costs are included in the Measure C Fund and several CFDs. As the 2017/18 budget states, the City approved a new five-year contract with the County Sheriff's Department in April 2017. Under the new agreement, the City anticipates the police service cost will increase ten to 15 percent per year, depending on a number of factors, including escalating pension costs, support services costs, and increasing service levels as the City's population continues to grow.

### **Finance and Information Tech**

The Finance and Information Tech department accounts for approximately \$2.6 million in total 2017/2018 Fiscal Year expenditures. Expenditures within the Finance and Information Tech department have steadily increased since FY 2012/13, when total expenditures amounted to \$2.1 million, indicating costs have increased by roughly 25 percent.

### **Administrative Services**

Expenditures within the Administrative Services department have generally increased at a similar rate relative to other departments, with one major spike in costs occurring in FY 2014/15. For example, expenditures within the departments were roughly \$880,000 in FY 2012/13 and roughly \$960,000 in FY 2013/14, but this cost increased to \$4.7 million in FY 2014/15. Upon further review of the budget with City staff, this was a one-time expenditure to set up a trust fund with the California Public Employees Retirement System (CalPERS) to fund retiree health benefits. As of FY 2017/18, expenditures in the Administrative Service department are anticipated to decrease to just \$1.5 million, accounting for 8.3 percent of the total General Fund budget.

### **General Government**

General Government expenditures include the City Council, City Manager, City Clerk, and City Attorney. In general, the expenditures have increased at a steady rate, with costs increasing from \$850,000 in FY 2012/2013 to \$1.4 million in FY 2017/2018, an increase of roughly 36 percent. While expenditures within the City Council and City Clerk's office have remained stable, expenditures within the City Manager and City Attorney's office have accounted for the largest share of General Government expenditure growth, spurred by increases in personnel costs.

### **Parks and Recreation**

The Parks and Recreation department expenditures have increased relatively slowly when compared to other departments. For example, while expenditures in the department were roughly \$1.1 million in the 2012/13 Fiscal Year, costs have increased to just under \$1.4 million in the 2017/18 Fiscal Year, representing an increase of roughly 30 percent. Within the Parks and Recreation department, one major expenditure is on a Youth Development program called Kids Club, which has nearly doubled in the past few years, from \$290,000 to \$512,000. Given that the total number of children as well as adult residents living in Lathrop is likely to increase as new housing is developed, the City can expect this cost, and costs for Parks and Recreation in general, to continue to rise.

### **Community Development**

The Community Development department consists primarily of the planning staff. Expenditures within this department have fluctuated over the last several years, with minor spikes during years of significant development plan review activity. For example, Community Development expenditures increased from roughly \$480,000 in FY 2012/13 to \$650,000 in FY 2013/14, almost entirely driven by increases in the contracted professional services category. Similarly, a slight increase in contractual service expenditures

occurred between FY 2015/16 and FY 2016/17. While the department costs do fluctuate, the total expenditures have yet to exceed \$1.1 million and are likely to continue the minor fluctuations in costs depending on utilization of contractual services.

**Transfers Out**

Transfers out of the General Fund account for the smallest portion of expenditures. While the amount transferred out of the General Fund fluctuates year-over-year, City staff indicate that the majority of transfers out are allocated to Capital Improvement Projects for infrastructure.

**MEASURE C REVENUE AND EXPENDITURES**

While Measure C is a separate fund, it functions similarly to the General Fund in that expenditures are earmarked for essential City services. Approved in 2012, the Measure applies an additional one percent sales tax on taxable sales within the City. As outlined in the ballot measure, 40 percent of the revenue is apportioned to the Lathrop-Manteca Fire District (LMFD), with the remaining 60 percent designated for essential City services, which thus far have been used to fund additional police officers and parks and recreation staff and improvements. Unlike many sales tax measures, Measure C does not have an official sunset date, indicating the revenue stream is likely to continue funding city services over the General Plan time horizon.

**Revenue**

As seen in Table 1.5-1, annual Measure C revenues have amounted to over \$2.8 million since its inception, with revenue projected to steadily increase through the 2018/19 fiscal year. Given the approved revenue split, the LMFD is projected to receive roughly \$1.3 million in FY 2017/18, while the Measure C Essential City Services fund will receive \$2.0 million in the same year.

**Expenditures**

In terms of expenditures of Measure C revenue, the Fire District generally spends the entire revenue allotment each fiscal year. According to the City budget, these funds have specifically funded six Firefighter Engineer positions and 66 percent of three Line Battalion Chief positions. Based on the goals of this fund moving forward, as noted in the budget, Measure C is anticipated to maintain funding of these positions indicating any new service demands would not be funded by Measure C revenue.

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**TABLE 1.5-1: MEASURE C REVENUE AND EXPENDITURES**

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19*
<b>Beginning Balance</b>							
July 1	n.a	\$452,987	\$1,400,204	\$2,191,984	\$2,233,238	\$2,547,363	\$3,541,100
<b>Revenues</b>							
Measure C - City Services	\$271,792	\$1,704,617	\$1,798,826	\$1,936,759	\$2,206,102	\$3,025,822	\$2,130,000
LMFD Measure C	\$181,195.	\$1,136,412	\$1,199,217	\$1,291,173	\$1,470,735	\$2,017,215	\$1,420,000
Interest		\$9	\$1,907	\$12,385	\$15,277	\$36,799	
<b>Total, All Measure C Revenues</b>	<b>\$452,987</b>	<b>\$2,841,038</b>	<b>\$2,999,950</b>	<b>\$3,240,317</b>	<b>\$3,692,114</b>	<b>\$5,079,836</b>	<b>\$3,550,000</b>
<b>Expenditures</b>							
<b>Essential City Services</b>							
Police Service	n.a.	\$526,150	\$833,991	\$931,295	\$950,591	\$1,352,854	\$1,641,792
Other Essential City Services	n.a.	\$50,056	\$174,962	\$313,791	\$359,219	\$557,387	\$616,764
Transfers Out	n.a.	\$0	\$0	\$662,804	\$597,444	\$158,643	\$50,000
<b>Total, Essential City Services</b>	<b>n.a.</b>	<b>\$576,206</b>	<b>\$1,008,953</b>	<b>\$1,907,890</b>	<b>\$1,907,254</b>	<b>\$2,068,884</b>	<b>\$2,308,556</b>
<b>Lathrop Manteca Fire District</b>	<b>n.a.</b>	<b>\$1,317,615</b>	<b>\$1,199,217</b>	<b>\$1,291,173</b>	<b>\$1,470,735</b>	<b>\$2,017,215</b>	<b>\$1,420,000</b>
<b>Total, All Measure C Expenditures</b>	<b>n.a.</b>	<b>\$1,893,821</b>	<b>\$2,208,170</b>	<b>\$3,199,063</b>	<b>\$3,377,989</b>	<b>\$4,086,099</b>	<b>\$3,728,556</b>
<b>Net Balance of Measure C Funds</b>	<b>\$452,987</b>	<b>\$1,400,204</b>	<b>\$2,191,984</b>	<b>\$2,233,238</b>	<b>\$2,547,363</b>	<b>\$3,541,100</b>	<b>\$3,362,544</b>

\*FY 2018/19 BUDGETED AMOUNTS

SOURCES: CITY OF LATHROP FINANCE DEPARTMENT, CITY BUDGETS, YEARS AS NOTED; BAE, 2017.

Within the Essential City Service fund, approximately half of the revenue is used to fund additional police service, including funding five sworn police positions. In addition to police, a large portion of the remaining funds are used for parks and recreation, with the Measure C revenue funding four staff and the maintenance costs of the Lathrop Generations Center. This indicates that the total cost of police service and parks and recreation is the sum of the General Fund and Measure C expenditures.

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## GENERAL PLAN UPDATE FISCAL CONSIDERATIONS

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Based on a review of City budget documents, in addition to discussions with City staff, this section summarizes fiscal implications for the General Plan Update, including both revenue and cost considerations.

### Property Tax

Property taxes account for the second largest source of revenue for the City’s General Fund, accounting for \$3.65 million in FY 2017-18, or 19.4 percent of the total revenue. The revenue generated by property taxes increases as property values rise and new development continues. On average, the City receives roughly 11 percent of the one percent ad-valorem property tax collected by the County for properties within the City limits. That said, the City receives significantly lower shares of property tax from the River Islands area of the City - typically below five percent, and also slightly reduced shares (from below five percent to 9.9 percent) for the Lathrop Gateway, and South Lathrop areas when compared to other older more established portions of the city - as seen in Figure 1.5-1. Given that these areas will accommodate the majority of Lathrop’s future growth, it will be important for the City to monitor the anticipated property tax revenue generated by these new developments in order to determine whether additional sources of revenue may be needed to adequately provide services to these new developments. Based on additional analysis of the budget and conversations with City staff, the majority of new subdivisions have established Community Facilities Districts (CFDs) to supplement the property tax revenue. The City will likely need to continue this policy with future projects, to ensure adequate revenues to compensate for the relatively low property tax allocations in new growth areas.

### Sales Taxes

Given that sales tax accounts for a large share of General Fund revenue and the City leveraged sales tax as a method for funding additional City Services through the passage of Measure C, it is evident that sales tax is critical for the future of Lathrop. SJCOG projections indicate the City’s population base is anticipated to expand at a rapid rate, potentially creating new opportunities to increase the inventory of retail and other space that can support additional taxable sales. Based on the planned and proposed commercial projects within the City, it appears as though a number of new commercial developments may come on line in the short-term, which would continue the projected upward trajectory of the General Fund sales tax and Measure C revenue.

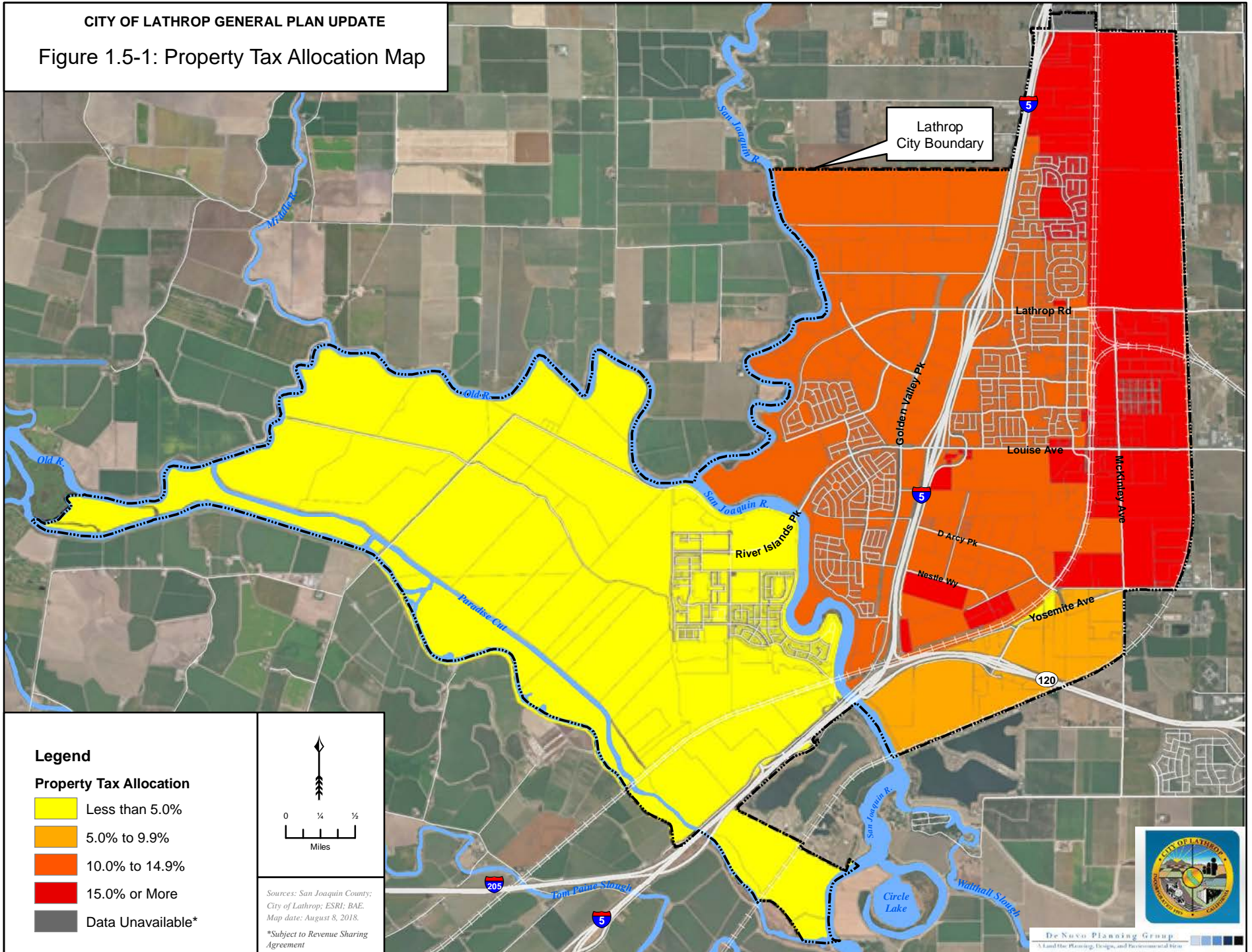
### Charges for Services

As noted above, General Fund revenue fluctuate depending on the demand from developers for various development-related fees, including plan check, inspection, and building permit fees. The City should take care to align charges for services with the actual cost of providing the services, whether by in-house staff or by contracted staff, which will likely require periodic fee schedule updates, to keep pace with changing costs.

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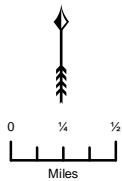
Figure 1.5-1: Property Tax Allocation Map



**Legend**

**Property Tax Allocation**

- Less than 5.0%
- 5.0% to 9.9%
- 10.0% to 14.9%
- 15.0% or More
- Data Unavailable\*



Sources: San Joaquin County; City of Lathrop; ESRI; BAE. Map date: August 8, 2018.

\*Subject to Revenue Sharing Agreement



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## 1.6 PROJECTIONS

To best address the future opportunities and needs of the City, this section summarizes the 2016 San Joaquin Council of Government (SJCOG) population, household, housing units, and employment projections for both the City of Lathrop and San Joaquin County.

### POPULATION, HOUSEHOLD, AND HOUSING UNIT GROWTH

According to the SJCOG projections, the City of Lathrop has the largest projected population and household growth in San Joaquin County. As seen in Table 1.6-1, the City of Lathrop population is projected to grow at an annual rate of 3.8 percent per year through 2040, more than doubling the total population in the City over that time frame. San Joaquin County, by comparison, is only projected to grow at an annual rate of 1.4 percent per year. Similarly, SJCOG projects the number of households will increase from 5,700 to 15,500 by 2040, at an annual rate of 4.1 percent per year, with the total number of households doubling by 2030. With the growth in households outpacing the projected growth in population, it is anticipated that the average household size is likely to increase at a marginal rate.

**TABLE 1.6-1: POPULATION, HOUSEHOLD, AND HOUSING UNIT PROJECTIONS, 2015 TO 2040**

CITY OF LATHROP	2015	2020	2025	2030	2035	2040	NET	AVG
							CHANGE	ANNUAL
							('15-'40)	('15-'40)
Population	23,107	28,896	35,475	42,109	50,007	58,969	35,863	3.8%
Households	5,690	7,440	9,310	11,162	13,135	15,441	9,751	4.1%
Housing Units	5,975	7,812	9,776	11,720	13,791	16,213	10,238	4.1%
							NET	AVG
							CHANGE	ANNUAL
SAN JOAQUIN							('15-'40)	('15-'40)
COUNTY	2015	2020	2025	2030	2035	2040		
Population	728,644	775,819	829,426	883,484	947,835	1,020,862	292,219	1.4%
Households	229,646	246,715	263,875	280,714	299,496	321,380	91,734	1.4%
Housing Units	241,128	259,051	277,070	294,751	314,470	337,448	96,321	1.4%

SOURCES: SAN JOAQUIN COUNCIL OF GOVERNMENTS (SJCOG), COUNTY FORECAST SUMMARY, 2016; BAE, 2017.

### JOB GROWTH

Despite the significant population and household growth, SJCOG projects that the total jobs within the City of Lathrop will increase at a somewhat slower rate. More specifically, between 2015 and 2040 the number of jobs within the City of Lathrop is anticipated to increase from roughly 6,000 to 11,800 total jobs, at an annual increase of 2.8 percent per year. The largest projected net growth by industry is within Leisure and Hospitality (853 new jobs), Government (852 new jobs), Educational and Health Services (845 new jobs), and Retail Trade (822 new jobs). While San Joaquin County is projected to follow a similar trend in terms of certain industries of growth, there are two specific industries that are not projected to grow as quickly in Lathrop, including Professional and Business Services and Construction, Natural Resources, & Mining.

## 1.0 LAND USE AND SOCIOECONOMICS

**TABLE 1.6-2: EMPLOYMENT BY INDUSTRY PROJECTIONS, 2015 TO 2040**

CITY OF LATHROP	2015	2020	2025	2030	2035	2040	NET CHANGE (‘15-‘40)	AVG ANNUAL GROWTH (‘15-‘40)
Construction, Natural Resources & Mining	544	681	803	874	958	1,065	521	2.7%
Manufacturing	1,404	1,552	1,570	1,551	1,529	1,515	111	0.3%
Wholesale Trade	674	747	793	815	824	821	147	0.8%
Retail Trade	495	640	797	967	1,143	1,316	822	4.0%
Transportation, Warehousing, & Utilities	696	876	917	971	982	971	276	1.3%
Information	2	2	2	3	3	3	1	1.8%
Financial Activities	79	74	75	76	80	83	4	0.2%
Professional & Business Svcs	737	852	994	1,113	1,235	1,365	628	2.5%
Educational & Health Svcs	287	454	620	789	962	1,132	845	5.6%
Leisure & Hospitality	445	635	794	959	1,129	1,298	853	4.4%
Other Services	178	330	481	635	789	942	763	6.9%
Agriculture, Forestry, Fishing and Hunting	22	21	21	21	20	20	-2	-0.5%
Government	421	596	762	935	1,104	1,273	852	4.5%
<b>Total Employment</b>	<b>5,984</b>	<b>7,459</b>	<b>8,629</b>	<b>9,709</b>	<b>10,756</b>	<b>11,805</b>	<b>5,821</b>	<b>2.8%</b>
SAN JOAQUIN COUNTY	2015	2020	2025	2030	2035	2040	NET CHANGE (‘15-‘40)	AVG ANNUAL GROWTH (‘15-‘40)
Construction, Natural Resources & Mining	10,206	12,783	15,068	16,407	17,990	19,995	9,788	2.7%
Manufacturing	18,925	20,915	21,154	20,907	20,608	20,420	1,496	0.3%
Wholesale Trade	11,408	12,647	13,430	13,788	13,946	13,903	2,495	0.8%
Retail Trade	26,142	25,839	26,284	27,660	29,352	30,903	4,761	0.7%
Transportation, Warehousing, & Utilities	20,090	24,907	25,614	26,527	26,710	26,537	6,447	1.1%
Information	2,008	2,153	2,414	2,599	2,869	3,164	1,155	1.8%
Financial Activities	7,344	6,850	6,945	7,071	7,409	7,695	351	0.2%
Professional & Business Svcs	19,708	22,773	26,562	29,754	33,016	36,501	16,793	2.5%
Educational & Health Svcs	36,443	39,676	42,954	46,641	50,961	54,911	18,468	1.7%
Leisure & Hospitality	19,651	21,937	22,445	23,268	24,428	25,489	5,838	1.0%
Other Services	7,057	7,180	7,327	7,675	7,968	8,258	1,201	0.6%
Agriculture, Forestry, Fishing and Hunting	16,466	15,781	15,447	15,382	15,005	14,702	-1,764	-0.5%
Government	39,532	42,600	44,562	47,416	49,680	52,092	12,560	1.1%
<b>Total Employment</b>	<b>234,980</b>	<b>256,041</b>	<b>270,207</b>	<b>285,095</b>	<b>299,942</b>	<b>314,570</b>	<b>79,590</b>	<b>1.2%</b>

SOURCES: SAN JOAQUIN COUNCIL OF GOVERNMENTS (SJCOC), COUNTY FORECAST SUMMARY, 2016; BAE, 2017.

## PLANNED AND PROPOSED PROJECTS

Despite the significant amount of projected growth, the pipeline of planned and proposed residential developments actually exceeds the projected growth through 2040. As seen in Table 1.6-3, the City has roughly 17,371 total housing units in the pipeline. The largest supply of proposed units is within the River Islands planning area, which includes up to 11,000 housing units, of which 4,284 units have been entitled as of February 2019. In addition to River Islands, the Central Lathrop planning area has roughly 6,800 total planned units, as outlined in the Central Lathrop Specific Plan, all of which remain unbuilt. The remaining units are generally scattered between the expanded Mossdale planning areas. It is worth noting that while the pipeline does contain over 2,000 multifamily units, this accounts for roughly 12 percent of the total pipeline, indicating a continuing trend of predominantly single-family homes.

**TABLE 1.6-3: PLANNED AND PROPOSED HOUSING DEVELOPMENTS, 2019**

PROJECT/PLANNING AREA	Residential Units		
	SINGLE-FAMILY	MULTIFAMILY	TOTAL
East Lathrop	0	0	0
Mossdale Landing	66	62	128
Mossdale Landing East	0	84	84
Mossdale Landing South	153	0	153
Mossdale Landing Other	0	204	204
Central Lathrop	6,126	664	6,790
River Islands	8,987	1,025	10,012*
<b>Total, All Planned and Proposed</b>	<b>15,332</b>	<b>2,039</b>	<b>17,371</b>

SOURCES: CITY OF LATHROP 2019; BAE, 2017.

NOTES: \*THE RIVER ISLANDS LAND USE PLAN CALLS FOR UP TO 11,000 RESIDENTIAL UNITS

In addition to residential units, a number of the planning areas also contain approved and proposed commercial and industrial developments.

As seen in Table 1.6-4, Lathrop has planned and proposed projects totaling roughly 556 acres of industrial land in the development pipeline. As seen in the table, the pipeline projects amount to potential for over nine million square feet of industrial space and roughly 500 thousand square feet of commercial space. The majority of the proposed commercial space is within the Mossdale Village area. With regard to planned industrial space, the South Lathrop planning area contains planned and proposed projects totaling roughly 4.85 million square feet of proposed space, in addition to 3.0 million square feet in the Lathrop Gateway planning area, and 1.38 million square feet in the East Lathrop area.<sup>2</sup> It is worth noting that the pipeline only contains projects that have been approved or are pending approval, which is why the River Islands, and Lathrop Gateway planning area’s do not show any proposed commercial development in the pipeline. According to the River Islands planning document, the final build-out of the River Islands area will contain a 305-acre employment center and a 45-acre town center; the Lathrop Gateway Specific Plan includes approximately 168 acres of limited industrial uses; and the South Lathrop Specific Plan proposes approximately 10 acres of additional commercial office development. Together these areas will account for additional future commercial development within the city.

**TABLE 1.6-4: PIPELINE COMMERCIAL AND INDUSTRIAL DEVELOPMENTS, 2019**

PROJECT/PLANNING AREA	COMMERCIAL		INDUSTRIAL	
	ACRES	SQUARE FEET (A)	ACRES	SQUARE FEET (A)
East Lathrop	NA*	NA*	136*	1,380,000*
Mossdale Village	23	300,303	0	0
South Lathrop	NA	147,983	249	4,850,000**
Lathrop Gateway	0	0	171	3,000,000
<b>Total, All Proposed</b>	<b>23</b>	<b>448,286</b>	<b>556</b>	<b>9,230,000</b>
<b>Estimated Employees (b)</b>		<b>897</b>		<b>7,384</b>

SOURCES: CITY OF LATHROP 2019; BAE, 2017.

NOTES: ASSUMES THE FOLLOWING EMPLOYMENT DENSITIES:

COMMERCIAL 500 SQUARE FEET PER EMPLOYEE

INDUSTRIAL 1,250 SQUARE FEET PER EMPLOYEE

\*NOTE: THE MAJORITY OF EAST LATHROP HAS BEEN DEVELOPED OR IS CURRENTLY UNDER CONSTRUCTION. RECENT ENTITLEMENTS INCLUDE A 380K SQ. FT. WAREHOUSE WITH COMMERCIAL FRONTAGE THAT WAS RECENTLY REZONED FROM HIGHWAY COMMERCIAL TO INDUSTRIAL, AND ALSO A

<sup>2</sup> “East Lathrop” refers to a unique area within the city that is bounded by Roth Road to the north, Louise Avenue to the south, Interstate-5 to the west, and the railroad tracks and city limits to the east.

## 1.0 LAND USE AND SOCIOECONOMICS

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*RECENTLY APPROVED APPROXIMATELY 1M SQ. FT. OF WAREHOUSING AT THE FORMER PILKINGTON GLASS PLANT ON LOUISE BETWEEN THE McDONALD'S AT HARLAN ON THE WEST AND HOWLAND ON THE EAST.*

*\*\*NOTE: THE CONSTRUCTION OF AN APPROXIMATELY 1.2 MILLION SQ. FT. WAREHOUSE BUILDING HAS STARTED THE BUILDOUT OF THIS AREA.*

### COMPARISON - PROJECTED GROWTH AND PLANNED AND PROPOSED PROJECTS

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Several broad conclusions may be drawn from the information contained in the prior two subsections. First, the City's pipeline of approved, planned, and proposed residential projects appears more than sufficient to accommodate projected growth through 2040, with a projected increase of roughly 10,000 new households by 2040 and a pipeline of approved, planned and proposed residential projects capable of accommodating roughly 18,000 new residential units. As previously noted, however, this pipeline supply includes a relatively smaller proportion of multifamily units, which may suggest a need to identify additional multifamily projects, or increase the proportion of multifamily units in the projects that have already been planned.

Similarly, the overall supply of approved, planned, and proposed commercial and industrial development appears adequate to accommodate total projected employment growth through 2040; however, there may be some mismatch in the type of non-residential development currently planned versus the types of employment growth that SJCOG expects. For example, the lower part of Table 1.6-4 estimates that at an average employment density of 1,250 square feet per employee, the 9.23 million square feet of approved, planned, and proposed industrial space could accommodate over 7,384 new employees. Meanwhile, the employment projections in Table 1.6-2 indicate a potential increase of 1,055 jobs in sectors likely to use industrial space.<sup>3</sup> As noted previously, if all the commercial projects developed as retail space, at an average employment density of 500 square feet per employee, pipeline development would support approximately 897 new commercial retail employees. The SJCOG employment projections indicate potential growth of 822 new Retail jobs and 853 new jobs in the Leisure and Hospitality sector by 2040. Additionally, other non-residential sectors with significant projected job growth, such as Education and Health Services (845 new jobs by 2040) and Professional and Business Services (628 new jobs by 2040) may also be opportunities to target high quality local jobs.

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<sup>3</sup> This includes the following sectors: Construction, Natural Resources & Mining; Manufacturing; Wholesale Trade; and Transportation, Warehousing & Utilities.

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## 1.0 LAND USE AND SOCIOECONOMICS

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## 2.0 CIRCULATION

The following section describes the existing regulatory, physical, and operational characteristics affecting the City of Lathrop’s transportation system. An overview of the regulatory framework is presented first, followed by an overview of the circulation network’s setting, descriptions of each transportation mode, and an analysis of existing segment vehicular level of service.

### REGULATORY FRAMEWORK

The City of Lathrop General Plan, along with regional, state and federal plans, legislation, and policy directives, provide guidelines for the safe operation of streets and transportation facilities in Lathrop. While the City of Lathrop has primary responsibility for the maintenance and operation of transportation facilities within the City, Lathrop staff works on a continual basis with responsible regional, state, and federal agencies including the County of San Joaquin, the San Joaquin Council of Governments (SJCOG), the California Department of Transportation (Caltrans), the Federal Highway Administration (FHWA), and others, to maintain, improve, and balance the multi-modal transportation needs of the community and the region.

#### STATE

#### **Assembly Bill 1358: State of California Complete Streets Act**

On September 30, 2008, Governor Schwarzenegger signed Assembly Bill (AB) 1358, the California Complete Streets Act of 2008, into law. AB 1358 requires any substantive revision of the circulation element of a city or county’s general plan to identify how they will safely accommodate the circulation of all users of the roadway including pedestrians, bicyclists, children, seniors, individuals with disabilities, and transit riders, as well as motorists.

#### **Caltrans Deputy Directive 64-R1: Complete Streets – Integrating the Transportation System**

In 2001, Caltrans adopted Deputy Directive (DD) 64, a policy directive related to non-motorized travel throughout the state. In October 2008, DD 64 was strengthened to reflect changing priorities and challenges. DD 64-R1 states:

*The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.*

*The Department develops integrated multimodal projects in balance with community goals, plans, and values. Addressing the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding, is implicit in these objectives. Bicycle, pedestrian, and transit travel is facilitated by creating “complete streets” beginning early in system planning and continuing through project delivery and maintenance and operations. Developing a network of “complete streets” requires collaboration among all Department functional units and stakeholders to establish effective partnerships.*

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**Complete Street**  
*A transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility. Complete street concepts apply to rural, suburban, and urban areas.*

Providing safe mobility for all users, including motorists, bicyclists, pedestrians and transit riders, contributes to the Department's vision: "Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability."

Successful long-term implementation of this policy is intended to result in more options for people to go from one place to another, less traffic congestion and greenhouse gas emissions, more walkable communities (with healthier, more active people), and fewer barriers for older adults, children, and people with disabilities.

Economically, complete streets can help revitalize communities, and they can give families the option to lower transportation costs by using transit, walking or bicycling rather than driving to reach their destinations. The Department is actively engaged in implementing its complete streets policy in all planning, programming, design, construction, operations, and maintenance activities and products on the State Highway System.

### **Caltrans Director's Policy 22 (DP-22), "Director's Policy on Context Sensitive Solutions"**

Director's Policy 22, a policy regarding the use of "Context Sensitive Solutions" on all state highways, was adopted by Caltrans in November of 2001. The policy reads:

*The Department uses "Context Sensitive Solutions" as an approach to plan, design, construct, maintain, and operate its transportation system. These solutions use innovative and inclusive approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. Context sensitive solutions are reached through a collaborative, interdisciplinary approach involving all stakeholders.*

*The context of all projects and activities is a key factor in reaching decisions. It is considered for all State transportation and support facilities when defining, developing, and evaluating options. When considering the context, issues such as funding feasibility, maintenance feasibility, traffic demand, impact on alternate routes, impact on safety, and relevant laws, rules, and regulations must be addressed.*

The policy recognizes that "in towns and cities across California, the State highway may be the only through street or may function as a local street," that "these communities desire that their main street be an economic, social, and cultural asset as well as provide for the safe and efficient movement of people and goods," and that "communities want transportation projects to provide opportunities for enhanced non-motorized travel and visual quality." The policy acknowledges that addressing these needs will assure that transportation solutions meet more than just traffic and operational objectives.

### **Senate Bill 743: Environmental Quality: Transit Oriented Infill Projects and Judicial Review Streamlining for Environmental Leadership Development Projects**

On September 27, 2013, California Governor Jerry Brown signed Senate Bill (SB) 743 into law. SB 743 will change transportation impact analysis as part of CEQA compliance when the rulemaking process is complete. These changes will include elimination of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts in many or all parts of California. The CEQA guidelines developed by the Governor's Office of Planning and Research utilize vehicle miles traveled (VMT) as the primary means of measuring transportation impacts. Furthermore, parking impacts will not be considered significant impacts on the environment for select

development projects within infill areas with nearby frequent transit service. According to the legislative intent contained in SB 743, these changes to current practice were necessary to more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.

### *LOCAL*

## **San Joaquin Council of Governments**

### *REGIONAL TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITY STRATEGY*

The current Regional Transportation Plan and Sustainable Community Strategy (RTP/SCS) produced by SJCOG was adopted in 2014. The RTP/SCS sets forth regional transportation policy and provides capital program planning for all regional, state, and federally funded projects. The RTP/SCS also demonstrates how land use development and transportation can work together to meet greenhouse gas emission reduction targets for cars and light trucks. The RTP can be considered the San Joaquin region's "statement of priorities" for the future transportation system. The RTP/SCS states that its policies, supportive strategies, and performance indicators are all designed to articulate what the region wants the future transportation system to look like, what types of decisions will help the region attain its vision, and the performance measures or indicators by which the region can assess its progress.

A 2018 RTP/SCS update has been drafted. The updated plan notes that it "recognizes the significant impact the transportation network has on the region's public health, mobility, and economic vitality" and "serves as a guide for achieving public policy decisions that will result in balanced investments for a wide range of multimodal transportation improvements."

### *MEASURE K: SAN JOAQUIN COUNTY LOCAL TRANSPORTATION IMPROVEMENT PLAN*

Measure K, the San Joaquin County Local Transportation Improvement Plan, was passed by San Joaquin County voters in November 1990 and renewed in November 2006. Measure K assesses a half-cent sales tax on purchases made throughout the County to provide direct funding for local transportation projects. The funds are dedicated to the specific programs and projects specified in the Measure K expenditure plan, including improved highways and local streets, new passenger rail service, regional and interregional bus routes, park-and-ride lots, new bicycle facilities, and railroad crossings. The renewal of Measure K is estimated to generate \$2.552 billion for these transportation programs. Funding from Measure K has been used to construct the Lathrop Road overcrossing of the Union Pacific railroad, among other projects.

## **City of Lathrop General Plan**

The Lathrop General Plan is a long-range comprehensive planning document required by state law to set policy and guide future growth, development, and conservation of resources. The Plan was adopted by the City in 1991 and amended most recently in 2015. The following goal applies to circulation in Lathrop.

### *Goal No. 6 - Transportation/Circulation/Traffic*

It is a goal of the General Plan to guide and provide for the development of an integrated system of transportation and internal circulation, and to provide access to other parts of San Joaquin County and the region.

## 2.0 CIRCULATION

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This goal is intended to benefit all citizens of Lathrop, including the young, the elderly and the physically handicapped, by seeking the following:

- Increased transportation safety for citizens.
- The efficient movement of people and goods.
- Lower vehicle operating costs.
- Lower vehicle miles traveled with consequent reduction in vehicle emissions.
- Economy in street construction and maintenance.
- A circulation system correlated and consistent with the land use patterns fostered by the General Plan.
- Avoidance of the disruption of residential areas caused by through traffic on minor streets.
- Protection of rights-of-way needed for future Arterial and Collector street widening in developed areas.
- Access to boat docking facilities.

Policies are organized by roadway functional classification, as shown below.

### *Interstate and State Route Freeways:*

1. The City should protect the through traffic functions of Interstate and State Route Freeways serving the Lathrop area by planning arterial street alignments which will avoid the need or desire to utilize freeway sections for short, local area interval trips as if they were elements of the local arterial street system.
2. Land use designations along freeway sections should take into consideration the existing visual and noise impacts associated with existing and future traffic levels on these major traffic carrying facilities.
3. Freeway interchanges should be improved to carry the demands of traffic generated by Lathrop's development, with new freeway interchanges and additional interchange ramps being added where necessary and practical in consideration of the need for fair apportionment of traffic to existing and future regional demands.

### *Arterial Streets:*

1. Arterials are to be the principal carriers of north-south and east-west traffic through Sub-Plan Areas #2 [east of the San Joaquin River and west of I-5] and #3 [west of the San Joaquin River]. They typically involve 4-6 lanes, but may occasionally be 2-lanes, depending on the amount of traffic capacity required, with landscaped dividers between intersections and left turn lanes at each intersection. Sufficient right-of-way is required to include room for landscaped corridors along either side. Spacing between the intersections of crossing streets should be in the range of 1,000 to preferably 2,500 feet. Spacing between "T" intersections should be at least 800' feet. On-street parking is to be prohibited.
2. Arterials are to be typically constructed for 4-6 lanes of traffic with left turn lanes provided at intersections, although in infrequently arterials may be 2 lanes wide. Development through residential areas should be designed to back-on to the Arterial, with ornamental walls and landscaping along the right-of-way line. In areas where development fronts the arterial, the design for a 2- or 4-lane facility may require a minimum right-of-way of 84'. Typically, this would involve four 12' travel lanes, two 8' parking lanes and two 10' minimum planting strips for the accommodation of sidewalks and street trees. Commercial sidewalks 10' in width need only be provided in retail commercial areas and along the frontages of other pedestrian-intensive uses.

Street trees should be provided along all Arterial streets. Rights-of-way should be widened at the approaches to major intersections to provide space for additional turn lanes.

3. Arterial streets serving Service Commercial and Industrial areas are to be designed and constructed to standards which reflect heavy truck traffic and the need for longer turning radii for trucks at intersections. On-street parking should be prohibited.

### *Collector Streets:*

1. Collector streets are to be designed to carry from 500 to 5,000 vehicles per day. Where average daily traffic (ADT) is projected to be less than 4,000, a ROW of 60' is usually sufficient. Typically, this will involve two 11' or 12' travel lanes, two 8' parking lanes and two 10' minimum planting strips with sidewalks. Sidewalk width need not exceed 4'- 5' except where intensive pedestrian traffic is expected such as along school access streets.
2. Where ADT is projected above 4,000 to 5,000 in residential areas, a 64' right-of-way is usually required. In commercial and industrial areas, four lanes of traffic may be required. Where ADT is projected above 5,000, with high peak hour traffic, wider cross-sections will be required. Rights-of-way may require widening on their approaches to Arterials, Expressways or other Collector streets in order to provide suitable turn lanes.
3. The high costs of converting a deficient Collector street to the appropriate standards required for existing and projected traffic should be limited to only those streets where either: a) high current and projected volumes of traffic are involved; b) joint funding is possible; c) significant contributions of private or assessment district funds are involved as part of the cost of developing adjacent lands; or d) where the rate of serious accidents has been high and where hazards to public safety are great.

### *Minor Streets:*

1. To keep Minor street volume within design capacity, street length shall be kept under 1,600 feet where possible unless interrupted by an Arterial or Collector street.
2. Design standards shall permit innovation and flexibility by the developer in relation to land use proposals under Planned Unit Development procedures of the Zoning Ordinance or under any applicable adopted Specific Plan.
3. In view of deficiencies in existing Minor streets, the City should consider forms of funding which include direct public sources (e.g., through redevelopment or assessment districts) as a means of overcoming Minor street deficiencies. Curb, gutter, sidewalk and paving needs along Minor streets might alternatively be made the responsibility of affected property owners. Under this policy, the City would assume responsibility for engineering services and additional costs occasioned by higher standards of street construction and drainage than were involved at the time of original street construction. The City might also share equally in total costs where a majority of property owners are willing to accept assessment proceedings or another appropriate method of collective project financing.
4. Policies for Minor streets are intended to reflect options for reducing through traffic on minor streets between intersections with Arterials. This policy seeks to eliminate the use of Minor streets as thoroughfares through residential areas where they extend parallel to nearby Arterials or Collectors for many blocks and are often used as substitutes for Arterials or Collectors.

### Lathrop Specific Plans

Lathrop has developed several Specific Plans that serve as the primary instruments of the City of Lathrop in carrying out policies and proposals of the Lathrop General Plan. As noted in the General Plan, the Specific Plans have several related functions:

1. The interpretive function of the Specific Plan indicates the degree of flexibility which is to be permitted; it provides development standards to be applied to the actions of the City and the private sector; and it provides guidance to the phasing and coordination of development activity.
2. The illustrative function describes and illustrates the ways in which private and public developments may be designed in a manner consistent with the General Plan.
3. The regulatory function sets forth the process of development regulation and even the regulations to be applied to private and public development actions.

The following Specific Plans have been adopted by the City:

- Central Lathrop Specific Plan
- Lathrop Gateway Specific Plan
- South Lathrop Specific Plan
- West Lathrop Specific Plan

(Specific Plan Boundaries are shown on Figure 1.1-5 in Section 1.0 Land Use)

### City of Lathrop Bicycle Transportation Plan

The 1995 Lathrop Bicycle Transportation Plan, last updated in 2004, was developed to improve and expand bicycling opportunities in Lathrop. The Bicycle Transportation Plan provides an additional level of refinement to the General Plan's Transportation and Circulation Element by providing a detailed set of policies and programs for bicycle circulation improvement. The Plan establishes bicycle goals, objectives, and policies; identifies future bicycle infrastructure projects; and promotes support facilities and educational programs. The following goal and objectives were established by the Plan:

*Goal A: To create a bikeway system that provides for convenient and safe bicycle circulation throughout Lathrop and maximizes the number of bicycle commuters.*

*Objective A.1: Provide a comprehensive network of bikeways that provides access to destination points throughout the community.*

*Objective A.2: Assure bikeways are fully integrated into all future development occurring within the City's General Plan Sphere.*

*Objective A.3: Provide route linkages to regional bikeways.*

*Objective A.4: Provide for a high level of rider safety along all bikeways.*

### Transportation Monitoring Program

As part of local development agreements and CEQA mitigation requirements developments within the city require participation in an annual Traffic Monitoring Plan TMP that forecasts street and circulation improvement needs.

The TMP monitors roadway conditions, projects roadway congestion two and four years into the future, and schedules when planned roadway improvements should be constructed to keep congestion at acceptable levels. The TMP is important because it establishes performance standards and details how the operations of the roadway system are to be monitored, as well as how improvements are to be scheduled for construction to avoid the roadway system falling below acceptable standards of operation. Developers are required to fund the TMP on a continuing basis until all required traffic improvements have been completed. The last TMP was prepared in 2014 and covered improvements through 2017. The city is currently working on an update that will cover 2018 through 2021.

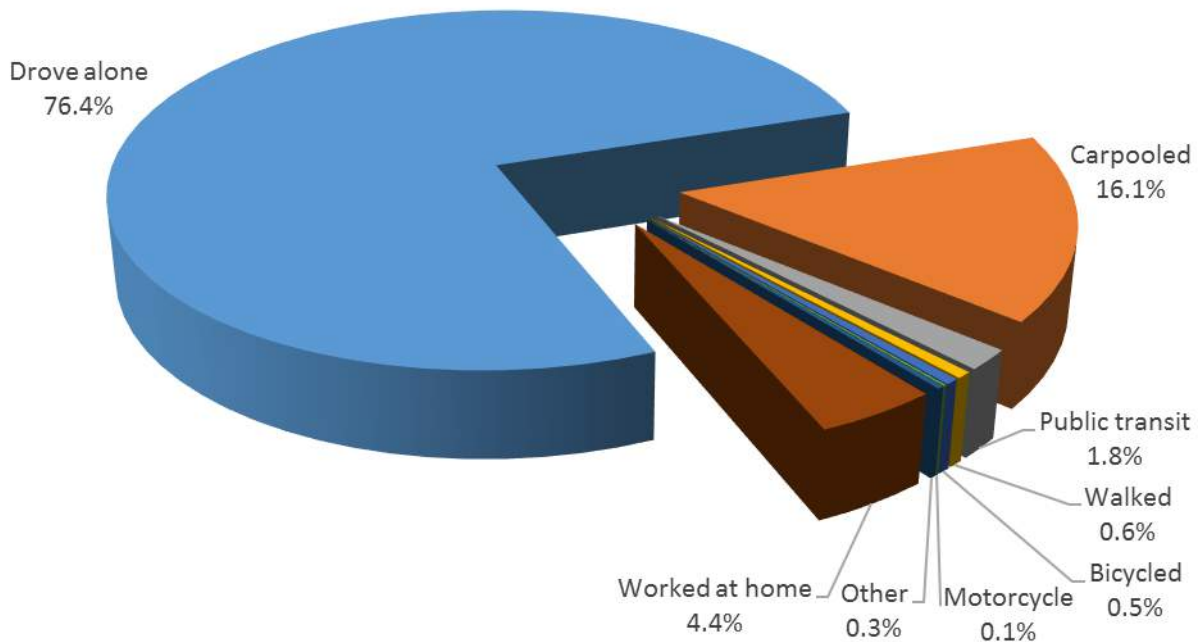
## EXISTING SETTING

### Urban Context

The City of Lathrop is located within California’s Central Valley in the southern portion of San Joaquin County. Interstate 5 (I-5) connects Lathrop to Stockton and Sacramento to the north and Los Angeles to the south. I-205 connects Lathrop to Tracy and the Bay Area to the west. State Route (SR) 120 connects Lathrop to Manteca, SR 99, foothill communities, and Yosemite National Park to the east. SR 99 also connects to Modesto and Fresno to the south.

### Travel Characteristics

CHART 2.0-1: U.S. CENSUS ACS 2012-2016 JOURNEY TO WORK



Data from the 2017 California Department of Finance (DOF) Population and Housing Estimate Report and 2012-2016 American Community Survey (ACS) were utilized to illustrate journey to work (JTW) statistics for Lathrop. According to the DOF, Lathrop’s population was estimated to be 23,110 people in 2017. The ACS estimates Lathrop had 7,976 employed residents 16 years of age or older. The ACS also reports that the majority of workers living in Lathrop, 76.4 percent, drove to work alone, whereas alternative modes

## 2.0 CIRCULATION

of transportation accounted for approximately 19 percent of commute trips, with 16.1 percent of workers in carpools, 1.8 percent using public transit systems, 0.6 percent of commuters walking to work, 0.5 percent bicycling to work, and 4.4 percent of workers working at home. Approximately 92.6% of all trips made by Lathrop’s employed residents are made by automobile or motorcycle (0.1%). It should be noted that these only represent home-based work trips, which represents approximately 12% of all trips made per household, according to the 2014 California Household Travel Survey.

Table 2.0-1 provides an overview of Lathrop’s JTW mode split data compared to countywide statistics for San Joaquin County and the State of California.

**TABLE 2.0-1: DEMOGRAPHIC AND JOURNEY TO WORK DATA**

	LATHROP		SAN JOAQUIN COUNTY		CALIFORNIA	
Population <sup>1</sup>	23,110		746,868		39,523,613	
Employed persons <sup>2</sup>	7,976		277,798		17,193,695	
MODE SPLIT	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE
Drove alone	6,090	76.4%	213,545	76.9%	12,636,396	73.5%
Carpooled	1,283	16.1%	39,951	14.4%	1,825,507	10.6%
Public transit	140	1.8%	3,966	1.4%	894,813	5.2%
Walked	45	0.6%	5,166	1.9%	463,369	2.7%
Bicycled	39	0.5%	1,493	0.5%	190,130	1.1%
Motorcycle	8	0.1%	681	0.2%	60,621	0.4%
Other	20	0.3%	2,090	0.8%	188,423	1.1%
Worked at home	351	4.4%	10,906	3.9%	934,436	5.4%

<sup>1</sup>POPULATION DATA OBTAINED FROM 2017 CALIFORNIA DEPARTMENT OF FINANCE POPULATION AND HOUSING ESTIMATE REPORT.

<sup>2</sup>EMPLOYMENT AND MODAL CHOICE DATA OBTAINED FROM 2012-2016 AMERICAN COMMUNITY SURVEY 5-YEAR ESTIMATES.

SOURCE: FEHR & PEERS, 2018.

### POPULATION AND EMPLOYMENT

Based on 2016 estimates, the ACS also reports characteristics of Lathrop’s employed residents 16 years of age or older. Of these workers, 13.0 percent or 1,037 work within Lathrop, 43.0 percent or 3,430 work within San Joaquin County but outside of Lathrop, and 43.9 percent or 3,494 work in other California counties. The mean travel time to work is 43.2 minutes, and 32.4 percent of residents have a travel time of 60 minutes or longer.

The US Census OnTheMap reported 7,247 jobs within Lathrop in 2015. According to OnTheMap, about 518 of these jobs were staffed by people living within Lathrop (lower than the ACS estimate above), and 6,729 were staffed by people living outside of Lathrop.

Additionally, Lathrop had 5,992 occupied households with an average of 3.86 persons per household, according to the 2017 California DOF Population and Housing Estimate Report.

### Vehicle Miles Traveled

A common indicator used to quantify the amount of motor vehicle use in a specified area is Vehicle Miles Traveled (VMT). One VMT is defined as any type of motor vehicle being driven one mile. VMT is typically reported for an average weekday. Many factors affect VMT including the average distance residents commute to work, school, and shopping, as well as the proportion of trips that are made by non-automobile modes. Areas that have a diverse land use mix and ample facilities for non-automobile modes, including transit, tend to generate lower VMT than auto-oriented suburban areas more distant from metropolitan centers.



The travel demand model developed by SJCOG will be adapted during the General Plan Update to estimate the changes in VMT resulting from buildout of the Plan. Since it is not known at this time exactly how VMT will be used to measure the efficiency of the City’s assumed land use growth and circulation network, a broad array of potential VMT metrics are presented in Table 2.0-2. By one of these measures, the model’s “base condition” scenario, which relies on existing travel characteristics and the built environment (such as land use quantities and patterns), estimates that approximately 1,212,000 vehicle miles of travel are generated daily within the City of Lathrop. This estimate reflects trips beginning or ending within the City of Lathrop and does not include regional traffic passing through the area [such as traffic on Interstate 5 (I-5) or State Route 120 (SR 120)].

It is customary for city or regional-wide studies to include the ratio values shown in rows 7 and 8 of Table 2.0-2, which represent all travel generated by Lathrop land uses on a per capita or employee basis. However, the VMT values are most meaningful when compared to the City’s future year model or regional conditions (regional VMT is not yet readily available). Row 9 is a more meaningful statistic and is recommended because it combines both trip generators in the denominator of the equation.

**TABLE 2.0-2: CITY OF LATHROP VEHICLE MILES TRAVELED (VMT) – EXISTING CONDITIONS**

ROW	CATEGORY	AMOUNT	NOTE
1	Total VMT Within Lathrop City Limits	1,086,185	Includes all vehicle travel within City Limits regardless of trip origin/destination (including all travel on I-5 and SR 120 within the City Limits)
2	Total VMT Generated by Lathrop Land Uses	1,211,662	VMT for all vehicle trips with an origin and/or destination within the City of Lathrop. For Lathrop trips that leave the City, portion of trip beyond City Limits also included.
3	Total Home-Based VMT for Lathrop Households	617,620	All home-based production trips including any portion of trip beyond City Limits
4	City of Lathrop Residents	23,110	Source: 2017 California Department of Finance Population and Housing Estimate Report
5	Estimated Employment Within City of Lathrop	7,607	Source: Travel Demand Model
6	Service Population	30,717	Residents plus employees
7	VMT per Capita (Resident)	52.4	Citywide ratio: row 2 divided by row 4
8	VMT per Employee	159.3	Citywide ratio: row 2 divided by row 5
9	VMT per Service Population	39.4	Citywide ratio: row 2 divided by row 6
10	Home-based VMT per Household	617,620 / 5,992 = 103.1	All home-based production trips including any portion of trip beyond City Limits
11	Home-based VMT per Capita	617,620 / 23,110 = 26.7	All home-based production trips including any portion of trip beyond City Limits

SOURCE: FEHR & PEERS, 2018.

## ROADWAY SYSTEM

This section describes the physical characteristics of Lathrop’s roadway network. Figure 2.0-1 shows the roadway classification system in Lathrop. Figure 2.0-2 shows the number of lanes on arterials and collectors.

### State Highways

Three highways operated and maintained by Caltrans pass through Lathrop, I-5, I-205, and SR 120.

**I-5** is a six-lane freeway running through the center of the City. I-5 is a primary route connecting the City of Lathrop with Stockton and Sacramento to the north and Los Angeles to the south. I-5 has interchanges with I-205 and SR 120 in the southern portion of the City. I-5 has interchanges at the following City streets:

- Roth Road
- Lathrop Road
- Louise Avenue
- Mossdale Road (northbound access only)
- Manthey Road (southbound access only)

**I-205** is a six-lane freeway that has an interchange with I-5 at its east terminus in the southern portion of the City. To the west, I-205 connects to Tracy and the Bay Area.

**SR 120** is a four-lane freeway that has an interchange with I-5 at its west terminus in the southern portion of the City. It continues through Manteca and has an interchange at Yosemite Avenue, serving eastern sections of Lathrop. A new interchange is planned at McKinley Avenue. SR 120 connects with SR 99 about six miles east of I-5, where it continues as an arterial east of SR 99 and as an expressway east of the Manteca city limit. To the east, SR 120 connects to Yosemite National Park and the Sierra.

### Arterials

Arterial streets are designed to serve through traffic and major local traffic generators such as residential, commercial, industrial, and institutional uses. (Traffic volumes provided for each segment below are based on counts collected by National Data and Surveying Services on April 3-4 or 17-18, 2018.)

Lathrop's north-south arterials are described below:

**Manthey Road** is a two-lane road within the City. North of the City, Manthey Road operates as a two-lane rural highway, passing primarily through agricultural and industrial uses before connecting to Stockton. Manthey Road continues south and terminates at Lathrop Road, then resumes again just north of Louise Avenue as a dead-end road serving local access. Manthey Road resumes once again at Town Centre Drive until it terminates in a rural agricultural area just south of the city limit. Between Towne Centre Drive and Stewart Road, Manthey Road carries approximately 2,700 vehicles per day.

**Harlan Road** is a two-lane road that begins north of the City at French Camp Road, passes through rural agricultural, residential, and industrial uses before entering the City just north of Roth Road. Harlan Road ends just north of SR 120. South of Lathrop Road, Harlan Road carries approximately 11,400 vehicles per day.

**McKinley Avenue** is a two-lane road that begins at Lathrop Road and continues through the city until it ends at Woodward Avenue south of the city limit. South of Louise Avenue, McKinley Avenue carries approximately 4,800 vehicles per day.

**Golden Valley Parkway** is a primarily six-lane road that currently begins at Lathrop Road/Spartan Way and ends at Brookhurst Boulevard. South of River Islands Parkway, Golden Valley Parkway carries approximately 6,500 vehicles per day.

**Somerston Parkway** is a four-lane road that begins at River Islands Parkway and ends just south of Mariners Drive. North of Mariners Drive, Somerston Parkway carries approximately 1,100 vehicles per day.

Lathrop's east-west arterials are described below:

**Roth Road** is a two-lane road that begins at Manthey Road and ends at Airport Way east of the city limit. Between I-5 and Harlan Road, Roth Road carries approximately 17,200 vehicles per day.

**Lathrop Road** is a four-lane road from Golden Valley Parkway west of I-5 through the city to the eastern city limit. Lathrop Road continues into Manteca primarily as a two-lane road. Between I-5 and Harlan Road, Lathrop Road carries approximately 24,300 vehicles per day.

**River Islands Parkway** currently begins at Dell'Osso Drive as a four-lane road, east to Sommerston Parkway where it narrows to two-lanes over the San Joaquin River to McKee Boulevard, where the road widens to six lanes to Golden Valley Parkway. East of Golden Valley Parkway it narrows to four-lanes to I-5. East of I-5, the road becomes Louise Avenue. West of Golden Valley Parkway, River Islands Parkway carries approximately 12,000 vehicles per day.

**Louise Avenue** is a four-lane road that begins east of I-5 and continues to the eastern city limit where it narrows to two lanes and continues into Manteca. Between I-5 and Harlan Road, Louise Avenue carries approximately 29,700 vehicles per day.

**Yosemite Avenue** is primarily a two-lane road that begins at the San Joaquin River levee in the South Lathrop Specific Plan as a 3-lane roadway, becomes four lanes as it meanders north of the SR 120, Yosemite Avenue interchange. Yosemite continues north and then east of D'Arcy Parkway as a two lane through to the eastern city limit into Manteca. East of McKinley Avenue, Yosemite Avenue carries approximately 10,700 vehicles per day.

### Truck Routes

Several local Surface Transportation Assistance Act (STAA) truck routes exist within Lathrop. STAA routes have specific signage and are designed with street widths, curb return radii, and other features to accommodate STAA trucks, which have longer wheelbases than other trucks. The following streets are STAA truck routes within Lathrop:

- Harlan Road
- Howland Road
- Roth Road between the I-5 southbound ramps and Harlan Road
- Lathrop Road between Manthey Road and Harlan Road
- Louise Avenue between Manthey Road and Howland Road
- D'Arcy Parkway between Harlan Road and Howland Road

Several other streets within the City are designated as City truck routes.

### At-Grade Railroad Crossings

At-grade railroad crossings with advanced signage, flashing signals, and crossing arms exist on the following streets:

- Roth Road west of McKinley Avenue

## 2.0 CIRCULATION

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- Roth Road at east city limit
- Louise Avenue west of McKinley Avenue
- Louise Avenue at east city limit
- D'Arcy Parkway east of Howland Road
- Yosemite Avenue at east city limit
- Nestle Way west of Christopher Way
- McKinley Avenue south of Lathrop Road
- McKinley Avenue at south city limit
- Stewart Road west of Manthey Road

Two at-grade railroad crossings of local railroad spurs serving industrial sites also exist on Howland Road. These crossings have signage only.

### Traffic Volume Patterns

As in many communities, vehicular traffic volumes in Lathrop (shown in Figure 2.0.3) tend to peak during weekday commute periods. Twenty-four-hour traffic volume counts on arterials and collectors collected for this report reveal these trends. On these streets, the peak hour typically occurs in the afternoon and represents 8 percent of daily traffic. Arterials and collectors have similar daily trends, and nearly all arterials and collectors have a peak hour volume representing between 7 percent and 9 percent of daily traffic. The volume trends are included in Appendix A at the end of this section.

## PUBLIC TRANSPORTATION SYSTEM

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### Bus Transit Operations

The San Joaquin Regional Transit District provides connections from Lathrop to Stockton, Tracy, and Livermore.

#### *SAN JOAQUIN REGIONAL TRANSIT DISTRICT*

**Route 90** connects Lathrop to Stockton and Tracy with service weekdays between 5:30 AM and 10 PM. Stops are provided on Louise Avenue at Harlan Road and 5<sup>th</sup> Street at the Lathrop Community Center.

**Route 97** connects Lathrop to Stockton and Tracy with service weekdays between 6:30 AM and 7 PM. One stop is provided on Lathrop Road at Harlan Road.

**Route 150** provides commuter service from Lathrop to the Dublin/Pleasanton BART station with nine departures every day. One stop is provided at the Crossroads Shopping Center on Harlan Road south of Lathrop Road.

**Route 152** provides commuter service from Lathrop to Livermore with one departure in the morning and one return in the afternoon. One stop is provided at the Crossroads Shopping Center on Harlan Road south of Lathrop Road.

The San Joaquin Regional Transit District has mounted exterior bicycle racks or cargo area bicycle storage on all fixed route interregional buses.

#### *PARATRANSIT*

San Joaquin Regional Transit provides paratransit, also known as dial-a-ride or door-to-door service, for people who are unable to independently use the transit system due to a physical or mental disability.

Individuals must be registered and certified as ADA eligible before using the service. Paratransit operators are required by the ADA to service areas within three-quarters of a mile of their respective, public fixed-route service. Service hours are Monday through Friday from 5:40 AM to 9:55 PM and weekends and holidays from 8:00 AM to 7:04 PM. Ride reservations must be made one to two days in advance.

Routes 90 and 97 are Hopper service routes, which replaces paratransit service during Hopper service hours. These routes will deviate up to three-quarters of a mile for certified passengers not able to reach their fixed route stops. Ride reservations must be made one to two days in advance.

### **Taxi Services**

Taxi service in Lathrop is provided by private operators that serve the City and the greater San Joaquin County area. Taxi service is available 24 hours a day, seven days a week by calling in a service request.

### **Transportation Networking Companies**

Lyft and Uber provide connections to local and regional destinations. Availability varies depending on driver availability, and service may not be available at all times. Service is requested by smartphone applications for each provider.

### **Altamont Corridor Express Rail Transit**

The Altamont Corridor Express (ACE) rail service connects Lathrop to San Jose and the Bay Area and also connects Stockton to Lathrop. During weekdays, four westbound trains serve Lathrop between 4:39 AM and 7:24 AM and four eastbound trains serve Lathrop between 5:23 PM and 8:26 PM. The Lathrop/Manteca station is located on Shideler Parkway at Yosemite Avenue (just east of McKinley Avenue). ACE trains allow bicycles on designated passenger train cars.

## **BICYCLE AND PEDESTRIAN SYSTEM**

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The following section describes the bicycle and pedestrian network in Lathrop.

### **Bicycle Facilities**

Bicycle facilities in Lathrop include the following:

- Class I multi-use bike path exists on:
  - Some sections of Golden Valley Parkway, Spartan Way, River Islands Parkway, Lakeside Drive, and Somerston Parkway
  - North side of Lathrop Road between Harlan Road and 5<sup>th</sup> Street
- Class II bike lanes exist on:
  - Eastbound Thomsen Road from Derby Lane to just west of Halmar Lane
  - 5<sup>th</sup> Street from Lathrop Road to H Street and from J Street to Louise Avenue
  - Lathrop Road from 5<sup>th</sup> Street to eastern city limit
  - Somerston Parkway south of River Islands Parkway
  - River Islands Parkway west of Somerston Parkway
  - Lakeside Drive west of Somerston Parkway

Lakeside Drive east of Somerston Parkway is currently signed for bike lanes but bike lanes are not striped.

In general, most Lathrop schools, parks, and public buildings are equipped with bike racks for short-term bicycle parking. Section 17.76.120 of the Lathrop Municipal Code specifies bicycle parking requirements, including number of spaces and locations.

## 2.0 CIRCULATION

### Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal infrastructure, curb ramps, and streetscape amenities. Most developed arterial streets in Lathrop provide sidewalk coverage, accessible curb ramps, and marked crosswalks. Sidewalks are also provided in most of Lathrop’s single-family residential neighborhoods, in multi-family residential developments, and in commercial developments.

While the pedestrian network is generally well developed in Lathrop, there are some locations where gaps in the sidewalk network can be found. In general, facilities along developing arterials vary depending on the level of development along the street. In some locations where adjacent parcels have not been developed, the street is not fully built-out and hence sidewalks have not been constructed.

### ROADWAY SEGMENT LEVEL OF SERVICE

Level of Service (LOS) is used to describe traffic operations on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, LOS A represents free flow conditions and LOS F represents forced flow or breakdown conditions. The various levels of service and their corresponding operating descriptions are described in Table 2.0-3.

**TABLE 2.0-3: ROADWAY SEGMENT LEVEL OF SERVICE CRITERIA**

<i>LOS</i>	<i>DESCRIPTION</i>	<i>TRAVEL SPEED AS A PERCENTAGE OF BASE FREE-FLOW SPEED</i>
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal.	>85
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant.	>67-85
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds.	>50-67
D	A less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections.	>40-50
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections.	>30-40
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing.	≤30

SOURCE: HIGHWAY CAPACITY MANUAL, TRANSPORTATION RESEARCH BOARD, 2010

As discussed in the Regulatory Framework section, SB 743 is changing how traffic impacts of development are being analyzed in California. In the past, CEQA impact analysis focused on intersection LOS during peak hours. Under rules being developed for SB 743, intersection LOS will no longer be required by CEQA. However, this does not preclude cities from continuing to adopt peak hour intersection LOS policies in their general plans. Rather, it places a greater emphasis on ensuring that travel demand models are able to accurately estimate VMT. Because VMT is the number of vehicle miles driven per day, the focus of traffic impacts is on daily conditions, including daily roadway segment operations and VMT.

### Study Segments

The following 41 study segments were identified as those most critical to Lathrop’s local circulation system and its connectivity to the regional transportation network. The locations of the study roadways are shown in Figure 2.0-3.

1. Roth Road between I-5 and Harlan Road
2. Harlan Road south of Roth Road
3. Roth Road between Harlan Road and McKinley Avenue
4. Roth Road between McKinley Avenue and City Limit
5. Lathrop Road between I-5 and Harlan Road
6. Harlan Road north of Lathrop Road
7. Lathrop Road between Harlan Road and 5th Street
8. Lathrop Road between 5th Street and McKinley Avenue
9. Lathrop Road between McKinley Avenue and City Limit
10. Spartan Way between Golden Valley Parkway and Lathrop High School
11. Golden Valley Parkway between Spartan Way and River Islands Parkway
12. Spartan Way between I-5 and Golden Valley Parkway
13. Harlan Road south of Lathrop Road
14. Cambridge Avenue south of Lathrop Road
15. 5th Street south of Lathrop Road
16. McKinley Avenue south of Lathrop Road
17. River Islands Parkway west of McKee Boulevard
18. River Islands Parkway between Golden Valley Parkway and McKee Boulevard
19. Golden Valley Parkway between River Islands Parkway and Towne Centre Drive
20. Louise Avenue between I-5 and Golden Valley Parkway
21. Louise Avenue between I-5 and Harlan Road
22. Harlan Road north of Louise Avenue
23. Louise Avenue between Harlan Road and McKinley Avenue
24. Cambridge Avenue north of Louise Avenue
25. 5th Street north of Louise Avenue
26. McKinley Avenue south of Louise Avenue
27. Louise Avenue between McKinley Avenue and City Limit
28. McKee Boulevard between River Islands Parkway and Towne Centre Drive
29. Towne Center Drive between Golden Valley Parkway and McKee Boulevard
30. Harlan Road between Louise Avenue and D’Arcy Parkway
31. D’Arcy Parkway east of Harlan Road
32. Manthey Road between Towne Centre Drive and Stewart Road
33. D’Arcy Parkway north of Yosemite Avenue
34. Yosemite Avenue between D’Arcy Parkway and McKinley Avenue
35. Yosemite Avenue between McKinley Avenue and City Limit
36. Cohen Road north of Lakeside Drive
37. Lakeside Drive between Stewart Road and Academy Drive
38. Stewart Road between Manthey Road and Lakeside Drive
39. Yosemite Avenue south of SR 120
40. Yosemite Avenue between SR 120 and D’Arcy Parkway
41. Paradise Road between Stewart Road and City Limit

Count data for each segment was collected on April 3-4 or 17-18, 2018, while schools were in session. No unusual traffic conditions were observed, and weather conditions were generally dry.

## 2.0 CIRCULATION

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The existing average daily traffic (ADT) volumes are shown in Figure 2.0-3. The mean ADT for all segments was 7,820. During peak hours, the mean directionality (D, the share of traffic in the predominate travel direction) was 0.63. The mean peak factor (K, the share of daily traffic during the highest peak hour) was 0.07.

Vehicle classification counts were collected on segments 7, 13, 18, 23, 30, and 40 listed above to estimate the proportion of the traffic flow that consisted of heavy vehicles (i.e., defined as three-axle or greater vehicles). Daily estimated heavy duty vehicle share ranged from 6 percent to 28 percent, with a mean of 15 percent.

### **Level of Service Methodology**

LOS thresholds were developed for each segment based on Highway Capacity Manual (Transportation Research Board, 2017) methodologies and are presented in Table 2.0-3. These thresholds considered K-factor, D-factor, speed limit, number of lanes, and presence or absence of a median. Typical assumptions for signal spacing, access points, signal timing, and other factors were made as described on page 16-30 of the Highway Capacity Manual. Presence of either a raised median or two-way left-turn lane (TWLTL) increase capacity (versus undivided streets) based on reduced lane blockages due to turning vehicles.

Table 2.0-4 shows that a four-lane arterial with a median and a posted speed limit of 40 mph would operate at LOS C with a maximum volume of 18,000 ADT. Operations would remain at LOS D until the volume exceeds 35,300 ADT. The practical operating capacity of this road would be reached when the volume reaches 37,900 ADT. A similar road with a slightly higher speed would enable slightly greater LOS C and D volumes, but would not change the street's capacity.



**TABLE 2.0-4: SEGMENT LEVEL OF SERVICE THRESHOLDS**

NUMBER OF LANES	TWO-WAY LEFT-TURN LANE OR RESTRICTED MEDIAN PRESENT	POSTED SPEED LIMIT	MAXIMUM ADT AT LOS LEVEL		
			C	D	E
2	Yes	25	4,400	14,300	19,900
		30	5,900	15,400	19,900
		35	7,400	16,500	19,900
		40	8,800	17,500	19,900
		45	10,300	18,600	19,900
	No	55	13,200	19,600	19,900
		25	4,200	13,600	18,900
		30	5,600	14,600	18,900
		35	7,000	15,700	18,900
		40	8,400	16,600	18,900
4	Yes	45	9,800	17,700	18,900
		55	12,500	18,600	18,900
		30	11,300	31,400	37,900
		35	14,700	33,300	37,900
	No	40	18,000	35,300	37,900
		45	21,400	37,200	37,900
		30	10,700	29,800	36,000
		35	14,000	31,600	36,000
6	Yes	40	17,100	33,500	36,000
		45	20,300	35,300	36,000
		30	16,300	46,400	54,300
		35	21,500	48,800	54,300
		40	26,700	51,300	54,300
		45	31,900	53,700	54,300
		50	37,100	54,000	54,300

NOTES: ADT = AVERAGE DAILY TRAFFIC; LOS = LEVEL OF SERVICE  
 SOURCE: FEHR & PEERS, 2018

**Level of Service Standards**

Page 4-B-2 of the Lathrop General Plan states that “arterial street proposals will assure volume-to-capacity ratios on all street sections at Level of Service C, and on all interchange ramps at Level of Service D.”

**Level of Service Analysis**

Currently, 35 of the 41 study segments are operating at or below the level of service standard. Table 2.0-5 and Figure 2.0-3 present ADT and LOS for each study segment. The six segments that operate at LOS D or E conditions are:

1. Roth Road between I-5 and Harlan Road
5. Lathrop Road between I-5 and Harlan Road
13. Harlan Road south of Lathrop Road
21. Louise Avenue between I-5 and Harlan Road
35. Yosemite Avenue between McKinley Avenue and City Limit
40. Yosemite Avenue between SR 120 and D’Arcy Parkway

These segments are generally near freeway interchanges and serve large amounts of local commercial and truck traffic.

## 2.0 CIRCULATION

**TABLE 2.0-5: SUMMARY OF EXISTING SEGMENT LEVELS OF SERVICE**

SEGMENT	NUMBER OF LANES	POSTED SPEED (MILES/HOUR)	ADT	LOS
1. Roth Road between I-5 and Harlan Road	2	40	17,200	E
2. Harlan Road south of Roth Road	2	45	8,400	C
3. Roth Road between Harlan Road and McKinley Avenue	2	40	7,600	C
4. Roth Road between McKinley Avenue and City Limit	2	40	5,300	C
5. Lathrop Road between I-5 and Harlan Road	4	35	24,300	D
6. Harlan Road north of Lathrop Road	2	45	9,600	C
7. Lathrop Road between Harlan Road and 5th Street	4	35	14,400	C
8. Lathrop Road between 5th Street and McKinley Avenue	4	45	16,100	C
9. Lathrop Road between McKinley Avenue and City Limit	4	45	15,300	C
10. Spartan Way between Golden Valley Parkway and Lathrop High School	2	35	4,200	C
11. Golden Valley Parkway between Spartan Way and River Islands Parkway	6	50	5,300	C
12. Spartan Way between I-5 and Golden Valley Parkway	4	35	7,000	C
13. Harlan Road south of Lathrop Road	2	40	11,400	D
14. Cambridge Avenue south of Lathrop Road	2	25	2,100	C
15. 5th Street south of Lathrop Road	2	25	4,000	C
16. McKinley Avenue south of Lathrop Road	2	45	2,600	C
17. River Islands Parkway west of McKee Boulevard	2	45	2,700	C
18. River Islands Parkway between Golden Valley Parkway and McKee Boulevard	6	45	12,000	C
19. Golden Valley Parkway between River Islands Parkway and Towne Centre Drive	6	45	6,500	C
20. Louise Avenue between I-5 and Golden Valley Parkway	4	45	16,300	C
21. Louise Avenue between I-5 and Harlan Road	4	45	29,700	D
22. Harlan Road north of Louise Avenue	2	40	7,400	C
23. Louise Avenue between Harlan Road and McKinley Avenue	4	45	17,500	C
24. Cambridge Avenue north of Louise Avenue	2	25	2,900	C
25. 5th Street north of Louise Avenue	2	25	2,800	C
26. McKinley Avenue south of Louise Avenue	2	50	4,800	C
27. Louise Avenue between McKinley Avenue and City Limit	4	45	15,000	C
28. McKee Boulevard between River Islands Parkway and Towne Centre Drive	2	35	1,400	C
29. Towne Center Drive between Golden Valley Parkway and McKee Boulevard	2	25	1,700	C
30. Harlan Road between Louise Avenue and D'Arcy Parkway	4	45	8,500	C
31. D'Arcy Parkway east of Harlan Road	2	40	3,200	C
32. Manthey Road between Towne Centre Drive and Stewart Road	2	45	2,700	C
33. D'Arcy Parkway north of Yosemite Avenue	4	30	5,000	C
34. Yosemite Avenue between D'Arcy Parkway and McKinley Avenue	2	45	6,700	C
35. Yosemite Avenue between McKinley Avenue and City Limit	2	45	10,700	D
36. Somerston Parkway north of Lakeside Drive	2	35	1,100	C
37. Lakeside Drive between Stewart Road and Somerston Parkway	2	25	2,600	C
38. Stewart Road between Manthey Road and Lakeside Drive	2	25	4,100	C
39. Yosemite Avenue south of SR 120	2	45	300	C
40. Yosemite Avenue between SR 120 and D'Arcy Parkway	2	45	10,100	D
41. Paradise Road between Stewart Road and City Limit	2	50	100	C

NOTES: **BOLD** = UNACCEPTABLE OPERATION ACCORDING TO GENERAL PLAN

ADT = AVERAGE DAILY TRAFFIC; LOS = LEVEL OF SERVICE

SOURCE: FEHR & PEERS, 2018



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CITY OF LATHROP GENERAL PLAN UPDATE

Figure 2.0-2 Number of Lanes

**Number of Lanes**

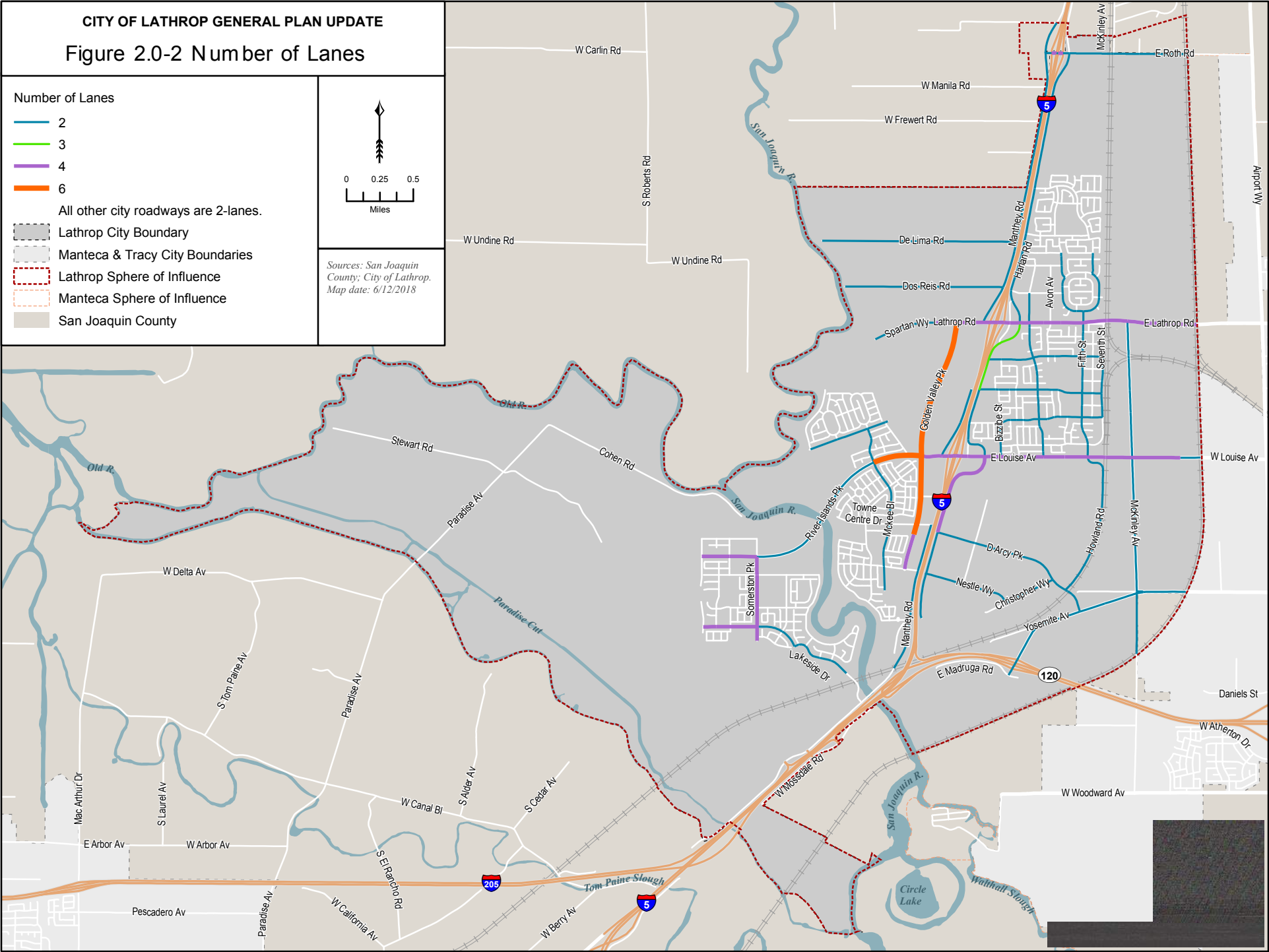
- 2
- 3
- 4
- 6

All other city roadways are 2-lanes.

- Lathrop City Boundary
- Manteca & Tracy City Boundaries
- Lathrop Sphere of Influence
- Manteca Sphere of Influence
- San Joaquin County

0 0.25 0.5  
Miles

*Sources: San Joaquin County; City of Lathrop.  
Map date: 6/12/2018*



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## APPENDIX A: SUMMARY OF EXISTING PEAK FACTORS

SEGMENT	ADT	PEAK HOUR VOLUME	PEAK HOUR FACTOR
1. Roth Road between I-5 and Harlan Road	17,200	1,110	6.4%
2. Harlan Road south of Roth Road	8,400	630	7.6%
3. Roth Road between Harlan Road and McKinley Avenue	7,600	560	7.3%
4. Roth Road between McKinley Avenue and City Limit	5,300	470	8.8%
5. Lathrop Road between I-5 and Harlan Road	24,300	1,820	7.5%
6. Harlan Road north of Lathrop Road	9,600	750	7.8%
7. Lathrop Road between Harlan Road and 5th Street	14,400	1,160	8.1%
8. Lathrop Road between 5th Street and McKinley Avenue	16,100	1,460	9.1%
9. Lathrop Road between McKinley Avenue and City Limit	15,300	1,340	8.8%
10. Spartan Way between Golden Valley Parkway and Lathrop High School	4,200	820	19.3%
11. Golden Valley Parkway between Spartan Way and River Islands Parkway	5,300	600	11.4%
12. Spartan Way between I-5 and Golden Valley Parkway	7,000	850	12.1%
13. Harlan Road south of Lathrop Road	11,400	910	8.0%
14. Cambridge Avenue south of Lathrop Road	2,100	190	8.9%
15. 5th Street south of Lathrop Road	4,000	440	10.8%
16. McKinley Avenue south of Lathrop Road	2,600	280	10.7%
17. River Islands Parkway west of McKee Boulevard	2,700	380	14.0%
18. River Islands Parkway between Golden Valley Parkway and McKee Boulevard	12,000	940	7.8%
19. Golden Valley Parkway between River Islands Parkway and Towne Centre Drive	6,500	620	9.5%
20. Louise Avenue between I-5 and Golden Valley Parkway	16,300	1,280	7.8%
21. Louise Avenue between I-5 and Harlan Road	29,700	2,160	7.3%
22. Harlan Road north of Louise Avenue	7,400	550	7.5%
23. Louise Avenue between Harlan Road and McKinley Avenue	17,500	1,380	7.9%
24. Cambridge Avenue north of Louise Avenue	2,900	270	9.4%
25. 5th Street north of Louise Avenue	2,800	310	11.4%
26. McKinley Avenue south of Louise Avenue	4,800	460	9.7%
27. Louise Avenue between McKinley Avenue and City Limit	15,000	1,110	7.4%
28. McKee Boulevard between River Islands Parkway and Towne Centre Drive	1,400	230	16.8%
29. Towne Center Drive between Golden Valley Parkway and McKee Boulevard	1,700	210	12.5%
30. Harlan Road between Louise Avenue and D'Arcy Parkway	8,500	640	7.5%
31. D'Arcy Parkway east of Harlan Road	3,200	250	8.0%
32. Manthey Road between Towne Centre Drive and Stewart Road	2,700	250	9.3%
33. D'Arcy Parkway north of Yosemite Avenue	5,000	410	8.1%
34. Yosemite Avenue between D'Arcy Parkway and McKinley Avenue	6,700	640	9.6%
35. Yosemite Avenue between McKinley Avenue and City Limit	10,700	1,060	9.9%
36. Somerston Parkway north of Lakeside Drive	1,100	150	13.1%
37. Lakeside Drive between Stewart Road and Somerston Parkway	2,600	200	7.8%
38. Stewart Road between Manthey Road and Lakeside Drive	4,100	350	8.5%
39. Yosemite Avenue south of SR 120	300	30	9.5%
40. Yosemite Avenue between SR 120 and D'Arcy Parkway	10,100	970	9.6%
41. Paradise Road between Stewart Road and City Limit	100	10	13.7%

NOTES: ADT= AVERAGE DAILY TRAFFIC; PEAK FACTOR (K) = PEAK HOUR VOLUME / ADT;

SOURCE: FEHR & PEERS, 2018

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### 3.0 COMMUNITY SERVICES AND FACILITIES

This chapter addresses utilities and community services within the City of Lathrop. Utility services include the provision of water, wastewater (sewer), stormwater and drainage, solid waste disposal, and electricity and natural gas. Community services include public safety, which are comprised of fire protection, law enforcement, and miscellaneous public safety services, and other community services, which are comprised of parks and recreation, schools, libraries, and other community facilities.

This chapter is divided into the following sections:

- 3.1 Utilities
  - 3.1.1 Water
  - 3.1.2 Wastewater
  - 3.1.3 Stormwater and Drainage
  - 3.1.4 Solid Waste
  - 3.1.5 Electricity and Natural Gas
- 3.2 Public Safety
  - 3.2.1 Fire Protection
  - 3.2.2 Law Enforcement
  - 3.2.3 Miscellaneous Public Safety
- 3.3 Parks and Recreation
- 3.4 Schools, Libraries, and Other Community Facilities

## 3.0 COMMUNITY SERVICES AND UTILITIES

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### 3.1 UTILITY SERVICES

This section addresses the provision of utilities in the City of Lathrop, including water, wastewater (sewer), stormwater and drainage, solid waste, electricity, and natural gas.

A technical memorandum provided by West Yost Associates serves as the primary source for the information provided within Section 3.1.1 (Water), Section 3.1.2 (Wastewater), and Section 3.1.3 (Stormwater and Drainage); the California Department of Resources Recycling and Recovery (CalRecycle) was the main source for the information for Section 3.1.4 (Solid Waste); and Pacific Gas and Electric Company (PG&E) was the main sources of information within Section 3.1.5 (Electricity and Natural Gas).

#### 3.1.1 WATER

The City of Lathrop provides water services directly to its residents. Figure 3.1-1 shows the existing water facilities within the City of Lathrop.

#### REGULATORY FRAMEWORK

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##### *STATE*

##### **California Department of Health Services**

The Department of Health Services, Division of Drinking Water and Environmental Management, oversees the Drinking Water Program. The Drinking Water Program regulates public water systems and certifies drinking water treatment and distribution operators. It provides support for small water systems and for improving their technical, managerial, and financial capacity. It provides subsidized funding for water system improvements under the State Revolving Fund (“SRF”) and Proposition 50 programs. The Drinking Water Program also oversees water recycling projects, permits water treatment devices, supports and promotes water system security, and oversees the Drinking Water Treatment and Research Fund for MTBE and other oxygenates.

##### **Consumer Confidence Report Requirements**

California Code of Regulations (CCR) Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminant levels set by regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

##### **Urban Water Management Planning Act**

The Urban Water Management Planning Act has as its objectives the management of urban water demands and the efficient use of urban water. Under its provisions, every urban water supplier is required to prepare and adopt an urban water management plan. An “urban water supplier” is a public or private water supplier that provides water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. The plan must identify and quantify the existing and planned sources of water available to the supplier, quantify the projected water use for a period of 20 years, and describe the supplier’s water demand management measures. The urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry

years. The Department of Water Resources (DWR) must receive a copy of an adopted urban water management plan.

### **Senate Bill (SB) 610 and Assembly Bill (AB) 901**

The State Legislature passed SB 610 and AB 901 in 2001. Both measures modified the Urban Water Management Planning Act.

SB 610 requires additional information in an urban water management plan if groundwater is identified as a source of water available to an urban water supplier. It also requires that the plan include a description of all water supply projects and programs that may be undertaken to meet total projected water use. SB 610 requires a city or county that determines a project is subject to CEQA to identify any public water system that may supply water to the project and to request identified public water systems to prepare a specified water supply assessment. The assessment must include, among other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and water received in prior years pursuant to these entitlements, rights, and contracts.

AB 901 requires an urban water management plan to include information, to the extent practicable, relating to the quality of existing sources of water available to an urban water supplier over given time periods. AB 901 also requires information on the manner in which water quality affects water management strategies and supply reliability. The bill requires a plan to describe plans to supplement a water source that may not be available at a consistent level of use, to the extent practicable. Additional findings and declarations relating to water quality are required.

### **Senate Bill (SB) 221**

SB 221 adds Government Code Section 66455.3, requiring that the local water agency be sent a copy of any proposed residential subdivision of more than 500 dwelling units within five days of the subdivision application being accepted as complete for processing by the city or county. It also adds Government Code Section 66473.7, establishing detailed requirements for establishing whether a “sufficient water supply” exists to support any proposed residential subdivisions of more than 500 dwellings, including any such subdivision involving a development agreement. When approving a qualifying subdivision tentative map, the city or county must include a condition requiring availability of a sufficient water supply. The applicable public water system must provide proof of availability. If there is no public water system, the city or county must undertake the analysis described in Government Code Section 66473.7. The analysis must include consideration of effects on other users of water and groundwater.

### *LOCAL*

### **City of Lathrop Urban Water Management Plan**

The City’s 2015 Urban Water Management Plan (UWMP) is an individual UWMP that describes how the current and future water resources and demands within the City’s service area will be managed to provide an adequate and reliable water supply. Additionally, the City’s UWMP reflects the following significant revisions to the UWMP ACT that have been made since 2010. The UWMP has been prepared in general accordance with the format suggested in DWR’s 2015 *Urban Water Management Plans Guidebook for Urban Water Suppliers*, dated March 2016.

### **City of Lathrop Water System Master Plan**

Updates to the City's Water, Wastewater and Recycled Water Master Plans are needed for compliance with legislation, to condition development and ensure public health and safety through effective planning and management of the City's water, wastewater and recycled water systems. Collectively, these documents are referred to as the Integrated Water Resources Master Plan (IWRMP). The IWRMP is used to plan future capital improvement projects and serves as the basis for regulatory compliance documents. The IWRMP serves as the planning document used to provide water infrastructure needed for the City to develop to its General Plan, and for the environmental determination to meet California Environmental Quality Act Requirements.

### **City of Lathrop General Plan**

The existing Lathrop General Plan includes the following goals and policies related to water services and/or supplies:

**GOAL #7 – Seismic Hazards: Goals for achieving and maintaining safety from seismic events include preventing serious injury, loss of life, serious damage to critical facilities involving large assemblies of people, and loss of continuity in providing services.**

**POLICY 12** – All lines which are part of the domestic water distribution system should be looped to assure adequate pressure in the event of a major fire, earthquake, or explosion. Adequate emergency standby power generation capability should be available at water wells to assure water availability in the event of a major power failure.

**GOAL #10 – Water Supply, Wastewater and Surface Water Management: It is the goal of the General Plan to provide for a secure source of fresh water for existing and future residents, and for the reuse of wastewater and surface water so that there is not net increase in water pollution, including point and non-point sources.**

### **City of Lathrop Municipal Code**

The Lathrop Municipal Code contains ordinances regulating potable and non-potable water within the City of Lathrop. Chapter 3.20 provides for the City's Impact Fee Ordinance, which requires development impact fees to be charged to fund improvements to the City's infrastructure. Chapter 12.22 provides for rules and restrictions on water play areas in city parks. Chapter 13.08 describes the City's water conservation and rationing provisions. Chapter 13.09 describes the City's water recycling policy. Chapter 13.12 describes the cross-connection controls of the City's water system. Chapter 13.16 provides restrictions on the location of the City's sewer and water pipes. Chapter 16.28 provides that developers of subdivisions shall provide adequate water supply and fire suppression improvements to the City's water system. Chapter 17.92 provides the City's Water Efficient Landscape Ordinance.

## WATER SUPPLIES AND DEMAND

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### **Water System**

The City of Lathrop provides water service to 6,308 residential, commercial, agricultural and industrial service connections from surface and groundwater supplies. In addition, private wells are utilized by two major industrial facilities within the City. The City's surface water supply is delivered fully treated from the Stanislaus River by the South County Water Supply Project (SCWSP). The SCWSP is owned and operated by the South San Joaquin Irrigation District (SSJID).

In addition to surface water, five groundwater wells supply water to City residents, with a sixth that is currently not in operation. Groundwater from Wells 6, 7, 8, 9 and 10 are treated to state and federal drinking water standards at the Louise Avenue Water Treatment Facility (LAWTF).

The City's potable water system service area reflects the City limits with the inclusion of select industrial areas, as shown in Figure 3.1-1.

### **Groundwater Facilities**

In 2018 a jurisdictional groundwater basin boundary modification request was approved by DWR to modify the boundaries of the Eastern San Joaquin (ESJ) Subbasin and the Tracy Subbasin to align with the City of Lathrop's (City's) City Limit to be fully encompassed within the Tracy Subbasin. The former basin boundaries split the City's service area between two groundwater basins (roughly bisecting the city along the San Joaquin River), requiring two Groundwater Sustainability Agencies (GSAs) (i.e., the City of Lathrop GSA and the Stewart Tract GSA) to cover the City, and the development and implementation of two Groundwater Sustainability Plans (GSPs). This boundary modification demonstrates that the modification promotes continued sustainable groundwater management. This commitment is articulated in the Memorandum of Understanding (MOU) between the City and Reclamation District (RD) 2062 (i.e., the Stewart Tract GSA) that formalizes their intent to form a joint GSA covering the entire City and to coordinate GSP development within the Tracy Subbasin.

The City owns and operates groundwater wells that pump from the Tracy Groundwater Sub-basin of the San Joaquin Valley Groundwater Basin. Existing Water Facilities are shown on Figure 3.1-1. Currently, five groundwater wells supply potable water to City connections including Wells 6, 7, 8, 9 and 10. Well 21 and the Well 21 water treatment facility have remained inactive from elevated uranium and arsenic since November 2003. The City plans to both upgrade the Well 21 treatment facility and dilute the well water to meet state and federal drinking water standards (West Yost Associates, 2018). The Well 21 water treatment facility Phase I pipeline is scheduled to be completed as early as 2020 and the Phase II tank by 2025. Groundwater from Wells 6, 7, 8, 9, and 10 is conveyed via 12-inch and 16-inch diameter water mains along the eastern border of the City along the railroad tracks to the LAWTF, where the groundwater is treated to remove arsenic.

Brought online in 2012, the LAWTF treats all groundwater for arsenic through a ferric chloride coagulation and filtration process. Removed compounds are disposed of in an approved landfill. The City is currently installing solids handling improvements at the LAWTF, including concrete drying beds to better facilitate sludge de-watering and disposal. The improvements are anticipated to be completed by the end of 2019.

### **Surface Water Facilities**

In 2005, SSJID began providing treated surface water from the Stanislaus River to the Cities of Lathrop, Manteca, and Tracy, as part of the SCWSP. SSJID's supply is the Stanislaus River and is based on pre-1914 water rights and post-1914 appropriative water rights for direct diversion to storage. SSJID's surface water rights are subject to a 1988 Agreement and Stipulation with the United States Bureau of Reclamation regarding the New Melones Reservoir operation. Phase I of the SCWSP construction was completed in July 2005. Phase II, including delivery to the City of Escalon, will be initiated when the participants notify SSJID of an impending need.

The SCWSP provides treated surface water from the Stanislaus River via Woodward Reservoir under a 300,000 acre-foot per year (AFY) entitlement. The supply is treated at SSJID's Nick C. DeGroot Water Treatment Plant which includes air floatation clarification and a submerged membrane filtration system.

There are three large storage tanks and four pump stations that deliver the water over 20 miles to the City via SSJID's Drinking Water Pipeline.

### **Recycled Non-Potable Water Facilities**

The Central Valley Regional Water Quality Control Board (CV-RWQCB) regulates the Lathrop Consolidated Treatment Facility (LCTF) and the use of recycled water. The City currently uses recycled water for irrigation of agricultural lands, irrigation of public landscape areas, and percolation basins. The City plans to expand its use of recycled water in the future to offset potable water demands, although it is not yet doing so. The City is currently expanding its recycled water distribution system to meet disposal requirements for the Phase II expansion of the LCTF. Phase II will increase the treatment capacity of the LCTF to 2.5 million gallons per day (mgd), which equates to 2,800 AFY and is scheduled to be operational in 2018. New developments such as Mosssdale Landing, River Islands and Central Lathrop, are being constructed with purple pipes to encourage the future use of reclaimed water for urban landscapes.

### **Distribution System Facilities**

The City's water distribution system consists of a single pressure zone and approximately 142 miles of distribution pipelines ranging from 2 inches to 30 inches in diameter. The following list describes the major components of the City's water distribution system facilities; these facilities include City-owned or City-operated infrastructure required to serve groundwater, surface water, and recycled water supplies, and are shown on Figure 3.1-1:

- The City of Lathrop has an emergency intertie with the City of Stockton for potable supply.
- The City receives SSJID treated surface water at SSJID Turnout 1, which includes a 1.0 MG tank and 7.5 mgd peak capacity. Turnout 1 is not owned by the City, and is therefore not included in the City's water storage. A second SSJID turnout is planned in the River Islands area with a 1 million-gallon treated storage.
- The City has 4.6 MG of storage divided between five ground-level storage tanks. Each tank has an associated booster pump station, and all but Booster Pump Station (BPS)-1 have variable frequency drive pumps. The City's tanks are used to help meet system demands during peak hours, provide emergency storage, and provide fire flow storage. In total, the City has approximately 37.4 mgd of domestic supply pump capacity, and an additional 13.8 mgd of fire pump capacity.

### **Water Demands and Supplies**

According to the Water System Master Plan City of Lathrop Integrated Water Resources Master Plan Update Draft, total potable water use was 3,646 acre-feet (AF) in 2016, with a per capita water use of 147 gallons per capita per day (GPCD). Given future water use projections provided in the WSMP, the City is expected to have a net surplus of 416 AFY of water in 2035, as shown in Table 3.1-1. As part of the SCWSP, the City signed a Water Supply Development Agreement in 1995 with SSJID for potable water lasting through to December 2029. The Water Supply Development Agreement allots the City a maximum total of 8,007 AFY in Phase I and 11,791 AFY of treated potable water during Phase II of the project. In August of 2013, the City Council agreed to sell 1,120 AFY of SSJID Phase I allocation to the City of Tracy, reducing the maximum Phase I allocation for Lathrop to 6,887 AFY. After Phase II is implemented, the City's allocation after sale will be 10,671 AFY, as shown in Table 3.1-1. The SSJID has experienced increased demand in recent years and is exploring options to expand their distribution system, although the schedule for these expansions are uncertain.



Although the City is projected to experience a 5 percent shortfall in normal years after 2040, further additional supply from planned improvements to Well 21, LCTF and construction of the Phase II SCWSP, increased non-potable water supply generated from the LCTF, and future unaccounted-for conservation measures are expected to provide the City with adequate supplies through 2040 during normal water years (West Yost Associates, 2018).

LAWTF has a current treatment capacity of 9 mgd, equating to 5,040 AFY. Currently, the capacity of all groundwater wells totals 5,850 AFY, but the potable supply is limited by the LAWTF treatment capacity. The City is currently installing solids handling improvements at the LAWTF to better facilitate sludge dewatering and disposal that will increase future capacity.

Reclaimed water usage has increase from 485 AFY in 2011 to 609 AFY in 2016 as shown in Table 3.1-1, and is projected to increase significantly with completion of new developments, including River Islands, where new infrastructure is already in place to utilize this future supply. It is important to note that the City's projection of future recycled water availability assumes increases to the treatment capacity of the LCTF that will keep pace with production.

The State of California's SBx7-7 Water Conservation Act of 2009 requires water retailers to establish and meet a water use reduction target of 20 percent by the year 2020 from a calculated baseline water use. The target is measured in total GPCD, rather than the residential water use divided by the population. The City adopted its 2020 SBx7-7 target of 188 GPCD in 2012, but exceeded the goal through voluntary water conservation measures and increases in non-potable water use.

### 3.0 COMMUNITY SERVICES AND UTILITIES

**TABLE 3.1-1: PAST AND FUTURE WATER SUPPLY CAPACITY AND DEMAND DURING NORMAL YEARS, AFY**

	ACTUAL						PROJECTED					
ANNUAL WATER DEMAND	2011	2012	2013	2014	2015	2016	2020	2025	2030	2035	2040	BUILDOUT
Potable Water Demand	3,798	4,332	4,686	4,008	3,445	3,646	7,350	9,711	11,965	13,531	15,185	18,616
Recycled Non-Potable Demand	485	437	465	519	546	609	1,495	2,439	3,398	4,112	4,815	6,284
Total Demand	4,283	4,769	5,151	4,527	3,991	4,255	8,845	12,150	15,363	17,643	20,000	24,900
Available Surface Water Capacity	8,007	8,007	8,007	6,887	6,887	6,887	6,887	6,887	6,887	6,887	10,671	10,671
Groundwater Pumping Capacity	5,850	5,850	5,850	5,850	5,850	5,850	6,253	7,060	7,060	7,060	7,060	7,060
Total Potable Capacity	13,857	13,857	13,857	12,737	12,737	12,737	13,140	13,947	13,947	13,947	17,731	17,731
Recycled Non-Potable Supply	485	437	465	519	546	609	1,495	2,439	3,398	4,112	4,815	6,284
Total Water Supply	14,342	14,294	14,322	13,256	13,283	13,346	14,635	16,386	17,345	18,059	22,546	24,015
Surplus or Deficit	10,059	9,525	9,171	8,729	9,292	9,091	5,790	4,236	1,982	416	2,546	(885)

SOURCE: WEST YOST ASSOCIATES, 2018. NOTES:

- POTABLE WATER DEMANDS FROM 2011-2016 FROM WSMP, 2018, TABLE 4-1.
- POTABLE WATER DEMANDS FROM 2020-BUILDOUT FROM WSMP, 2018, TABLE 5-11.
- RECYCLED WATER DEMAND ASSUMES ALL WASTEWATER GENERATED WILL CONTINUE TO BE USED.
- AVAILABLE SURFACE WATER CAPACITY FROM WSMP, 2018, TABLE 5-4.
- THE CITY'S TOTAL PHASE I ALLOTMENT OF SCWSP WATER, FOLLOWING THE 2013 SALE TO THE CITY OF TRACY OF 1,120 AFY, IS 6,887 AFY.
- GROUNDWATER CAPACITY FROM 2011-2016 IS BASED ON ANNUAL YIELD OF WELLS 6-10 NOT LIMITED BY LAWTF CAPACITY (WSMP, TABLE 5-3).
- GROUNDWATER CAPACITY FROM 2020-2040 IS FROM WSMP, 2018, TABLE 5-7.
- RECYCLED NON-POTABLE PRODUCTION FROM 2011-2015 IS BASED ON THE HISTORICAL LCTF AVERAGE ANNUAL FLOW (DRAFT 2018 WWMP), TABLE 4-1.
- RECYCLED NON-POTABLE PRODUCTION FROM 2016-BUILDOUT IS BASED ON RWMP, 2018, TABLE 4-1, CONVERTED TO AFY AND ASSUMES FUTURE TREATMENT CAPACITY AT LCTF

### Water System Infrastructure Photographs

Photographs of some of City of Lathrop’s water system infrastructure are provided below.

***PHOTOGRAPH 3.1-1: SOUTH SAN JOAQUIN IRRIGATION DISTRICT TURNOUT 1***



Photograph 3.1-1 shows the South San Joaquin Irrigation District (SSJID) Turnout 1, which is located on Lathrop Road, east of McKinley Avenue. SSJID Turnout 1 includes a 1.0 million-gallon tank and 7.5 mgd per day peak capacity.

***PHOTOGRAPH 3.1-2: LOUISE AVENUE WATER TREATMENT FACILITY***



Photograph 3.1-2 shows Louise Avenue Water Treatment Facility filtration tanks, which are located south of Louise Avenue. The facility treats groundwater from Wells 6 through 10.

***PHOTOGRAPH 3.1-3: LOUISE AVENUE WATER TREATMENT FACILITY STORAGE TANK***



Photograph 3.1-3 shows Louise Avenue Water Treatment facility storage tank, which is located south of Louise Avenue.

**PHOTOGRAPH 3.1-4: LOUISE AVENUE WATER TREATMENT FACILITY BLENDING INFRASTRUCTURE**



**PHOTOGRAPH 3.1-5: GROUNDWATER SUPPLY WELL 8**



Photograph 3.1-4 shows blending infrastructure at the Louise Avenue Water Treatment Facility, and photograph 3.1-5 shows the location of groundwater supply Well 8.

### **Major Water System Issues and Opportunities**

The City currently has adequate supply, storage, and peaking pumping capacity to meet supply needs. As shown in Table 3.1-1, the City is projected to have sufficient supplies to meet projected demands in normal years until 2040 (West Yost Associates, 2018). The City is only projected to experience a supply shortfall in normal years after 2040, with a projected supply shortfall at buildout of 888 AFY (5 percent of demands). Additional supply, storage, and peak pumping capacity will be required to support future development through 2040.

The City recently received approval from DWR in 2018 for a Jurisdictional Request to Align the Eastern San Joaquin and Tracy Subbasins with the City of Lathrop's City Limit (DWR, 2018) to re-align the boundary between subbasins, consolidating Lathrop's supply entirely within the Tracy basin. The former basin boundaries split the City's service area between two groundwater basins (roughly bisecting the city along the San Joaquin River), requiring two Groundwater Sustainability Agencies (GSAs) to cover the City, and the development and implementation of two Groundwater Sustainability Plans (GSPs). This boundary modification demonstrates that the modification promotes continued sustainable groundwater management while providing the city a more streamlined approach to groundwater management.

The City of Lathrop anticipates that it will have access to more than 98 percent of its SCWSP supply in normal years. Normal water deliveries are provided when the New Melones Reservoir inflows exceed 600,000 AFY. The SSJID's SCWSP entitlement is dependent on New Melones Reservoir inflow and is subject to curtailment in dry years. When inflows are less than 600,000 AFY, the supply is shared equally between SSJID and Oakdale Irrigation District, which also holds a 300,000 AFY entitlement. The SCWSP participants' agreement with SSJID indicates the municipal and agricultural users would share surface water reductions equally. In single dry years, the City projects that it will receive between 74 percent and 75 percent of its SCWSP supply. In a three-year, multiple dry year scenario, the City projects its SCWSP allocation to range from 85 to 87 percent in the first year, 88 to 90 percent in the second year (due in part to decreased agricultural demand projections), and 83 to 85 percent in the third year. In response to anticipated future dry-year shortfalls, the City has developed a robust Water Shortage Contingency Plan in its 2015 UWMP that systematically identifies ways in which the City can reduce water demands and augment supplies during dry years (West Yost Associates, 2018).

### 3.1.2 WASTEWATER

The City of Lathrop provides sewer (wastewater) services<sup>1</sup> throughout the City of Lathrop. Figure 3.1-2 provides the existing sewer system within the City of Lathrop.

#### REGULATORY FRAMEWORK

##### *STATE*

#### **State Water Resources Control Board/Regional Water Quality Control Board**

In California, all wastewater treatment and disposal systems fall under the overall regulatory authority of the State Water Resources Control Board (SWRCB) and the nine California Regional Water Quality Control Boards (RWQCBs), who are charged with the responsibility of protecting beneficial uses of State waters (ground and surface) from a variety of waste discharges, including wastewater from individual and municipal systems.

The RWQCB's regulatory role often involves the formation and implementation of basic water protection policies. These are reflected in the individual RWQCB's Basin Plan, generally in the form of guidelines, criteria and/or prohibitions related to the siting, design, construction, and maintenance of on-site sewage disposal systems. The SWRCB's role has historically been one of providing overall policy direction, organizational and technical assistance, and a communications link to the State legislature.

The RWQCBs may waive or delegate regulatory authority for on-site sewage disposal systems to counties, cities or special districts. Although not mandatory, it is commonly done and has proven to be administratively efficient. In some cases, this is accomplished through a Memorandum of Understanding (MOU), whereby the local agency commits to enforcing the Basin Plan requirements or other specified standards that may be more restrictive. The RWQCBs generally elect to retain permitting authority over large and/or commercial or industrial on-site sewage disposal systems, depending on the volume and character of the wastewater.

##### *LOCAL*

#### **City of Lathrop Sewer System Management Plan**

The City of Lathrop Sewer System Management Plan (SSMP) was prepared in compliance with the requirements contained in the SWRCB General Order No. 2006-003-DWQ. An SSMP is a document that describes the activities the City of Lathrop uses to manage its wastewater collection system effectively. Effective management of a wastewater collection system includes: (1) Maintaining or improving the condition of the collection system infrastructure in order to provide reliable service into the future; (2) Cost-effectively minimizing infiltration/inflow (I/I) and providing adequate sewer capacity to accommodate design storm flows; and (3) minimizing the number of sanitary sewer overflows that occur. The Lathrop SSMP was originally adopted in July 2009 and was updated in 2013, 2016, and 2018.

#### **City of Lathrop Water System Master Plan**

Updates to the City's Water, Wastewater and Recycled Water Master Plans are needed for compliance with legislation, to condition development and ensure public health and safety through effective planning and management of the City's water, wastewater and recycled water systems. Collectively, these documents are referred to as the Integrated Water Resources Master Plan (IWRMP). The IWRMP is used to plan future capital improvement projects and serves as the basis for regulatory compliance documents.

<sup>1</sup> The terms "sewer" and "wastewater" are used interchangeably in this report.

## 3.0 COMMUNITY SERVICES AND UTILITIES

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The IWRMP serves as the planning document used to provide water infrastructure needed for the City to develop to its General Plan, and for the environmental determination to meet California Environmental Quality Act Requirements.

### City of Lathrop General Plan

The existing Lathrop General Plan includes the following goal related to wastewater:

**GOAL #10 – Water Supply, Wastewater and Surface Water Management: It is the goal of the General Plan to provide for a secure source of fresh water for existing and future residents, and for the reuse of wastewater and surface water so that there is not net increase in water pollution, including point and non-point sources.**

### City of Lathrop Municipal Code

The Lathrop Municipal Code contains ordinances regulating wastewater within the City of Lathrop. Chapter 3.20 provides for the City's Impact Fee Ordinance, which requires development impact fees to be charged to fund improvements to the City's infrastructure. Chapter 13.16 provides restrictions on the location of the City's sewer and water pipes. Chapter 13.26 provides the City's sewer and industrial wastewater regulations. Chapter 3.20 provides for the City's Impact Fee Ordinance, which requires development impact fees to be charged to fund improvements to the City's infrastructure.

## SEWER COLLECTION SYSTEM AND WASTEWATER TREATMENT

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### Wastewater System Overview

Wastewater from the City of Lathrop is currently treated at the Manteca Water Quality Control Facility (MWQCF) and the LCTF. The MWQCF treats most of the City's wastewater generated in areas east of Interstate Highway 5 (I-5), excluding the Crossroads development area. The LCTF treats the wastewater generated west of I-5 and in the Crossroads development area. Delineation of the sewer sheds can be found in Figure 3.1-2. In 2016, the City generated a total average annual flow of 1.46 mgd with 0.92 mgd treated at the MWQCF and 0.54 mgd treated at the LCTF as documented in the City's IWRMP.

### Wastewater Collection System

The City's wastewater collection system consists of approximately 72 miles of gravity mains ranging from 6 to 36 inches, 21 miles of force mains ranging from 4 to 18 inches, and 12 pump stations. Approximately 63 percent of gravity mains are polyvinyl chloride pipes, which is the City's current standard pipe material. The remaining 37 percent of pipes are vitrified clay pipes that are in Historic Lathrop and Crossroad Business Park areas. The City has a supervisory control and data acquisition (SCADA) system for control and monitoring of facilities. The City's wastewater collection system service area is generally contiguous with the city limits.

The City currently provides wastewater service to approximately 6,100 residential, commercial, industrial and institutional/governmental properties. However, there are areas within the city limits that are not served by the wastewater system. Many large facilities (e.g., Simplot, the former Pilkington Glass facility, the former Sharpe Army Depot, and former Carpenter Company facility) and the Next Generation STEAM Academy in River Island have historically self-managed their wastewater (West Yost Associates, 2018). Some of these areas have been planned to move to City service, as they are re-developed. Some residential homes and businesses in the central portion of Lathrop (e.g. Lathrop Industrial and South Lathrop) are served by a septic system.



LCTF and MWQCF have independent sewer sheds except at the 8-inch Mossdale Intertie. The Mossdale Intertie crosses beneath I-5 on River Islands Parkway and Louise Avenue. The Mossdale intertie is not routinely operated, but could potentially be utilized in the future to reroute a portion of flows from the Mossdale Pump Station to the MWQCF collection system. A map of wastewater infrastructure is shown in Figure 3.1-2.

### Wastewater Treatment Facilities

Wastewater treatment facilities that serve the City include the Manteca Water Quality Control Facility (MWQCF) and the Lathrop Consolidated Treatment Facility (LCTF). These facilities are described below.

#### *MANTECA WATER QUALITY CONTROL FACILITY*

The City owns 14.7 percent of the MWQCF capacity by contract with the City of Manteca. The City does not participate in the operation of the facility, nor does it receive recycled water from the facility. As discussed in the City's *Municipal Service Review and Sphere of Influence Plan*, and as listed in Table 3.1-2, the City is allocated 1.45 mgd of the total 9.87 mgd facility capacity. The MWQCF is permitted for future expansions of up to 26.97 mgd, of which the City would be allocated a maximum of 14.7 percent capacity or 3.97 mgd. Treatment at the MWQCF consists of primary sedimentation followed by roughing biotowers, conventional activated sludge, secondary clarification, tertiary filtration, and ultraviolet disinfection. Disinfected tertiary effluent is discharged to the San Joaquin River. A portion of the secondary effluent is not disinfected and is used to irrigate medians and agricultural fields.

**TABLE 3.1-2: FUTURE SEWER CAPACITY, MGD**

Year	2016	2020	2025	2030	2035	2040	BUILDOUT 2050
<i>DEMAND</i>							
<i>MWQCF Projected ADWF</i>	1.08	1.23	1.36	1.37	1.38	1.39	1.47
<i>LCTF Projected ADWF</i>	0.61	1.33	2.18	3.03	3.67	4.30	5.61
<b>ADWF Total</b>	<b>1.69</b>	<b>2.56</b>	<b>3.54</b>	<b>4.40</b>	<b>5.05</b>	<b>5.69</b>	<b>7.08</b>
<i>TREATMENT CAPACITY</i>							
<i>MWQCF</i>	1.45	1.45	1.45	1.45	1.45	1.45	1.45
<i>MWQCF Improvements</i>	2.52	2.52	2.52	2.52	2.52	2.52	2.52
<i>LCTF</i>	0.75	0.75	0.75	0.75	0.75	0.75	0.75
<i>LCTF Phase I</i>	0.25 <sup>(a)</sup>	0.25	0.25	0.25	0.25	0.25	0.25
<i>LCTF Phase II</i>	Not Complete <sup>(b)</sup>	1.5	1.5	1.5	1.5	1.5	1.5
<b>Treatment Total</b>	<b>4.97</b>	<b>6.47</b>	<b>6.47</b>	<b>6.47</b>	<b>6.47</b>	<b>6.47</b>	<b>6.47</b>

SOURCE: WEST YOST ASSOCIATES, 2018. NOTES:

(A) CURRENTLY THE DISPOSAL CAPACITY IS ONLY PERMITTED FOR 0.75 MGD BECAUSE THE RECYCLED WATER DISPOSAL FACILITIES REQUIRED TO SUPPORT THE 0.25 MGD PHASE I EXPANSION HAVE NOT RECEIVED FINAL ACCEPTANCE. ACCEPTANCE OF FACILITIES ARE ANTICIPATED BY APRIL 2018.

(B) FACILITY IS SUBSTANTIALLY COMPLETED AS OF JUNE, 2018.

### 3.0 COMMUNITY SERVICES AND UTILITIES

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#### *LATHROP CONSOLIDATED TREATMENT FACILITY*

The LCTF is City-owned but operated by a private contractor, Veolia Water NA. The LCTF's treatment capacity was expanded to 2.5 mgd, with the completion of recent recycled water disposal facilities. However, capacity is currently limited to 1.55 mgd by off-site recycled water storage and disposal capacity. The LCTF is planned to be expanded to a future permitted capacity of 6.0 mgd.

Wastewater treatment and disposal at the LCTF is regulated under the California Regional Quality Control Board Central Valley Region Waste Discharge Requirements. LCTF applies the effluent to land rather than discharging to a water body, and is therefore not subject to the NPDES requirements. The wastewater treatment processes at the LCTF includes secondary treatment, tertiary infiltration, and disinfection prior to storage and disposal. The LCTF produces disinfected tertiary recycled water suitable for irrigation at parks, landscape strips, median islands, pond berms, and agricultural fields.

Wastewater treatment processes at the LCTF include secondary treatment, tertiary filtration, disinfection, and reuse for irrigation of agricultural and landscape use areas. The following major components make up the LCTF:

- Raw wastewater undergoes screening and grit removal prior to entering the influent pump station. A 0.95 MG steel tank provides diurnal flow equalization and short-term emergency storage. Wastewater in the tank is automatically returned to the influent pump station as treatment capacity becomes available.
- From the influent pump station, wastewater is distributed evenly to two Membrane Bioreactor treatment trains for a combined treatment capacity of 1.0 mgd. Each Membrane Bioreactor train includes an anoxic basin, recirculation mixers, an aeration basin, anoxic pumps, aeration and membrane blowers, membrane modules, a membrane tank, mixed liquor recycle pumps, and filtrate pumps.
- Disinfection is accomplished using sodium hypochlorite solution in a chlorine contact tank that provides more than 32 minutes of modal contact time. If disinfection fails, the effluent is rerouted back to the emergency storage basin and retreated.
- Tertiary treated effluent is discharged into Pond S5 for immediate storage, and is then transferred to off-site storage in Ponds S1, S2, S3, S6, S16, and the Crossroads Wastewater Treatment Effluent Storage Ponds A, B, and C.
- Waste activated sludge generated from LCTF is pumped to the solids handling facility located at the adjacent Crossroads Wastewater Treatment Facility. The solids handling facility includes a 0.19 MG aerobic sludge storage tank, two belt filter presses, and a concrete drying bed used for supplemental air drying of dewatered sludge when conditions permit. Air-dried sludge is temporarily stored on the drying bed until transportation to the City of Merced for land application.
- The City's existing recycled water system is governed by State Discharge Requirements outlined in Order R5-2018-0023 and supports the disposal of the effluent produced by the LCTF at eight agricultural land application areas (LAAs): A23, A28, A30, A31, A35, A35b, A35c, and A36. The distribution system consists of nine storage ponds; S1, S2, S3, S5, S6, S16, S-28, A, B, and C, their associated pump stations PMP1, PMP2, PMP3, PMP10, PMP12, and the Crossroads PMP. The City has approximately 30.3 miles of recycled water pipeline, as of 2018.

### **Demands**

The Central Valley Regional Water Quality Control Board and the IWRMP guide the long-term strategy for meeting future discharge and capacity requirements. From 2009 to 2016, total per capita average dry weather flow (ADWF) varied between 60 and 69 gallons of wastewater per capita per day. It is anticipated that the City's total ADWF in 2040 will be 5.69 mgd, and increase to 7.07 mgd at buildout in 2050. Of this total, the MWQCF is projected to treat ADWFs of 1.39 mgd from Central Lathrop in 2040 and 1.47 mgd at buildout. Areas served by the LCTF have larger increases in planned development and are projected to treat ADWFs of 4.30 mgd in 2040 and 5.61 mgd at buildout.

### **Major Wastewater System Issues and Opportunities**

The City's collection system is primarily assessed against the capacity criteria, including depth to diameter (d/D) ratio in gravity mains and maximum velocity in force mains. Approximately seven percent of City's existing gravity mains will not meet the capacity criteria by 2040. Approximately 43 percent of the City's existing gravity mains do not meet the minimum velocity and slope criteria which does not trigger an improvement unless capacity criteria are not met beyond 2040 (West Yost Associates, 2018).

The LCTF with Phase II expansion is projected to have sufficient treatment capacity for existing and new development through 2026. The City's current capacity allocation at MWQCF is projected to be sufficient to meet projected flows from Historic Lathrop through 2040 with additional capacity needed by buildout. The gravity collection system in the Mossdale Landing will not be able to accommodate the anticipated peak waste water flow from River Islands and Central Lathrop areas by 2025. Correspondingly, an upgrade to the Central Lathrop Pump Station as well as the River Islands Permanent Pump Station will be required before 2025. Deficiencies at the Stonebridge Lift Station and Woodfield Lift Station are noted in multiple buildout scenarios (West Yost Associates, 2018).

### 3.1.3 STORMWATER/DRAINAGE AND FLOOD CONTROL

The City of Lathrop provides storm drainage services throughout the city. Figure 3.1-3 identifies the existing storm drainage system within the City of Lathrop.

#### REGULATORY FRAMEWORK

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##### *FEDERAL*

##### **Clean Water Act (CWA)**

The Clean Water Act (CWA) regulates the water quality of all discharges into waters of the United States including wetlands, perennial and intermittent stream channels. Section 401, Title 33, Section 1341 of the CWA sets forth water quality certification requirements for “any applicant applying for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters.” Section 404, Title 33, Section 1344 of the CWA in part authorizes the U.S. Army Corps of Engineers to:

- Set requirements and standards pertaining to such discharges: subparagraph (e); Issue permits “for the discharge of dredged or fill material into the navigable waters at specified disposal sites”: subparagraph (a);
- Specify the disposal sites for such permits: subparagraph (b);
- Deny or restrict the use of specified disposal sites if “the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies and fishery areas”: subparagraph (c);
- Specify type of and conditions for non-prohibited discharges: subparagraph (f);
- Provide for individual State or interstate compact administration of general permit programs: subparagraphs (g), (h), and (j);
- Withdraw approval of such State or interstate permit programs: subparagraph (i);
- Ensure public availability of permits and permit applications: subparagraph (o);
- Exempt certain Federal or State projects from regulation under this Section: subparagraph (r); and,
- Determine conditions and penalties for violation of permit conditions or limitations: subparagraph (s).
- Section 401 certification is required prior to final issuance of Section 404 permits from the U.S. Army Corps of Engineers.

The California State Water Resources Control Board and RWQCBs enforce State of California statutes that are equivalent to or more stringent than the Federal statutes. RWQCBs are responsible for establishing water quality standards and objectives that protect the beneficial uses of various waters including the San Joaquin River, and other waters in the Lathrop Planning Area. In the Lathrop Planning Area, the RWQCB is responsible for protecting surface and groundwater from both point and non-point sources of pollution.

Water quality objectives for all of the water bodies within the Lathrop Planning Area were established by the RWQCB and are listed in its Basin Plan.

### **Federal Emergency Management Agency (FEMA)**

San Joaquin County is a participant in the National Flood Insurance Program (NFIP), a Federal program administered by FEMA. Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

### **National Pollutant Discharge Elimination System (NPDES)**

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, oceans, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.).

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the EPA Regional Administrator (EPA Region 9). The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti-degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the CWA.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and therefore must be updated regularly. To expedite the permit issuance process, the RWQCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB has issued general permits for stormwater runoff from construction sites statewide. Stormwater discharges from industrial and construction activities Lathrop can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

A new Phase II Small Municipal Separate Storm Sewer (MS4) General Permit was adopted by the State Water Resources Control Board on February 5, 2013 became effective July 1, 2013. The Permit has numerous new components and the City is required to implement these components in stages over the five-year period of the Permit.

*STATE*

### **Department of Water Resources**

The Department of Water Resources' (DWR) major responsibilities include preparing and updating the California Water Plan to guide development and management of the State's water resources, planning, designing, constructing, operating, and maintaining the State Water Resources Development System, protecting and restoring the Sacramento-San Joaquin Delta, regulating dams, providing flood protection,

assisting in emergency management to safeguard life and property, educating the public, and serving local water needs by providing technical assistance. In addition, the DWR cooperates with local agencies on water resources investigations; supports watershed and river restoration programs; encourages water conservation; explores conjunctive use of ground and surface water; facilitates voluntary water transfers; and, when needed, operates a State drought water bank.

### **California Water Code**

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a Water Quality Control Plan (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

### **Water Quality Control Plan (Basin Plan) for the Central Valley Region**

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

### **State Water Resources Control Board (State Water Board) Storm Water Strategy**

The Storm Water Strategy is founded on the results of the Storm Water Strategic Initiative, which served to direct the State Water Board's role in storm water resources management and evolve the Storm Water Program by a) developing guiding principles to serve as the foundation of the storm water program, b) identifying issues that support or inhibit the program from aligning with the guiding principles, and c) proposing and prioritizing projects that the Water Boards could implement to address those issues. The State Water Board staff created a strategy-based document called the Strategy to Optimize Management of Storm Water (STORMS). STORMS includes a program vision, missions, goals, objectives, projects,

timelines, and consideration of the most effective integration of project outcomes into the Water Board's Storm Water Program.

### *LOCAL*

#### **Multi-Agency Post-construction Standards (LID)**

The City of Lathrop, in collaboration with San Joaquin County, Tracy, Lodi, Manteca, and Patterson prepared a Multi-Agency Post-Construction Stormwater Standards Manual to provide consistent guidance for municipal workers, developers in implementing the requirements under the Statewide Small MS4 NPDES permit (2013-0001-DWQ). The guidance provides tools to address the following objectives:

- Establish the methodology to consider the effects of stormwater runoff from a new development or redevelopment project during the project planning phase;
- Minimize contiguously-connected impervious surfaces in areas of new development and redevelopment, and where feasible, to maximize on-site infiltration of stormwater runoff;
- Implement site design measures to preserve, create, or restore areas that provide important water quality benefits such as riparian corridors, wetlands, stream and buffers, and maintain, protect, and improve underlying soil quality;
- Provide source control measures to minimize the transport of and/or eliminate potential sources of pollution to stormwater runoff or run-on into the MS4 and receiving waters;
- Implement Low Impact Development (LID) control measures to reduce and/or eliminate the volume of stormwater runoff and pollutants leaving the project site;
- Control post-construction peak stormwater runoff discharge volumes and velocities (hydromodification) to mitigate impacts from downstream erosion and to protect downstream habitat; and
- Develop tools for effectively operating, managing, and maintaining stormwater control measures.

#### **City of Lathrop Sewer System Management Plan**

The City of Lathrop Sewer System Management Plan (SSMP) (March 2018) was prepared in compliance with the State Water Resource Board (SWRCB) General Order No. 2006-0003-DWQ. This order mandated the development of an SSMP and the reporting of sewer system overflows using an electronic reporting system. The City of Lathrop SSMP was originally adopted in 2009 and was updated in 2013, 2016, and 2018. The SSMP describes the City's wastewater collection system consists of approximately 72 miles of gravity mains, 21 miles of force mains, as well as 12 lift and pump stations. The Plan describes that the City has a supervisory control and data acquisition (SCADA) system for control and monitoring of facilities.

#### **City of Lathrop General Plan**

The existing City of Lathrop General Plan identifies the following policies related to stormwater and/or flood control:

#### **Goal No. #8 – Public Safety Hazards: Goals for public safety seek to accomplish the following:**

- 1. The reduction of loss of life or property due to crime, fire, earthquake, flooding or other disasters or hazards.**

**POLICY 5** – The City will continue to cooperate with the County of San Joaquin and other agencies in pre-disaster planning activities such as evacuation required in the event of a serious breach of an upstream dam capable of flooding the community.

### **City of Lathrop SB 5 200-year Flood Protection General Plan Amendment**

On March 25, 2015, the City of Lathrop drafted a General Plan Amendment to adhere to State of California Senate Bill 5, which were designed to set new flood protection standards for urban areas. SB 5 established the State standard for flood protection in urban areas as protection from the 200-year frequency flood. Under SB 5, urban and urbanizing areas must be provided with the 200-year flood protection no later than 2025. This General Plan Amendment amends the Safety Element of the City of Lathrop General Plan to comply with the provisions established under SB 5.

### **City of Lathrop Municipal Code**

The Lathrop Municipal Code contains ordinances regulating stormwater/drainage and flood control within the City of Lathrop. Chapter 3.20 provides for the City's Impact Fee Ordinance, which requires development impact fees to be charged to fund improvements to the City's infrastructure. Chapter 3.20 provides for the City's Impact Fee Ordinance, which requires development impact fees to be charged to fund improvements to the City's infrastructure. Chapter 3.23 provides the City's interim urban level of flood protection levee impact fee. Chapter 13.28 provides the City's Stormwater Management and Discharge Control Ordinance. Chapter 15.56 describes methods of reducing flood losses. Chapter 16.10 provides that subdivisions in flood hazard zones shall not be approved until applicable findings required in Chapter 17.17 of Lathrop Municipal Code are made. Chapter 17.17 describes the 200-year flood protection requirements for new development.

## **STORM DRAINAGE SYSTEM**

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The City of Lathrop's storm drainage collection system uses pipelines, surface channels and, in some locations, detention basins that store peak flows to direct drainage to the San Joaquin River. The City's documented existing storm drain infrastructure includes approximately 916 inlets, 691 manholes, 21 pump stations, 4 outfalls to the San Joaquin River, 13 detention basins, and 36 miles of storm drain.

The City references three documents to address water quality: the *General Permit for Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems Order No. 2013-0001-DWQ*, the *Multi-Agency Post-Construction Stormwater Standards Manual*, and the *City of Lathrop Department of Public Works Design and Construction Standards*. The Best Management Practices required by these documents are intended to assure that outfall discharges meet Clean Water Act National Pollutant Discharge Elimination System (NPDES) requirements. New developments within the City are also required to mitigate stormwater discharge rate increases caused by development, as noted in the City of Lathrop Design and Construction Standards.

### **Area-Specific Drainage Master Plans**

The last comprehensive City storm drain master plan was published in 1992 and covers facilities in and adjacent to historic Lathrop. As development has occurred, specific plans, and project plans, have become the most current source of information on drainage facilities in each new development. These plans include Central Lathrop, Crossroads Business Park, Historic Lathrop, Mossdale Landing, North Lathrop, River Islands and South Lathrop areas. The plan areas are described below and are discussed in further detail in the City's *Municipal Service Review and Sphere of Influence Plan*. Some planning areas have changed since the original area-specific plans were developed. The areas covered by each area's plan described below correspond to the most recent available information on drainage zones, as shown on Figure 3.1-3.



*CENTRAL LATHROP*

The *Central Lathrop Specific Plan* proposes future development of 1,520 acres located west of I-5. The Specific Plan proposes low, medium, and high density residential units, commercial land uses, two schools and 200 acres of recreational land use and open space. The *Central Lathrop Specific Plan* identifies pre-development drainage as a system of shallow agricultural ditches that discharge into the San Joaquin River by small, privately-owned pumps. The planned drainage system has been constructed for this area, including inlets, storm drains, detention, a pump station and outfall, with full development expected by 2050, although no mapping of utility completion is available. The system will mitigate increased runoff volume and peak flow rates produced by the development. Infiltration from high groundwater into the collection system will be a concern.

*CROSSROADS BUSINESS PARK*

The Crossroads Business Park area is a commercial and industrial development area. The area historically included a large amount of impervious pavement with a single stormwater detention facility. A new drainage system comprised of gravity mains, detention, pump stations and outfalls has been required to mitigate increased runoff volume and peak flow rates produced by development. On-lot detention is also required as noted in the *Crossroads Storm Drainage Master Plan*. As of June 2018, the Crossroads Business Park is nearly fully developed as envisioned by the *Crossroads Storm Drainage Master Plan*. However, mapping of drainage infrastructure is not yet available.

*HISTORIC LATHROP*

The 1,500-acre portion of the City east of I-5 is anticipated to continue increasing in density, as it has historically. The primary storm drainage system within the study area consists of pipe networks draining to detention basins and pump stations. Detention basins are used to increase the capacity of the system through peak flow reduction, as peak flow rates are greater than the current pumping capacity. Drainage facilities vary widely in adequacy with newer areas having improved effectiveness. Densification and redevelopment are ongoing in the area.

*LATHROP INDUSTRIAL AREA*

The Lathrop Industrial Area is a large commercial and industrial area that includes the Stonebridge area, formerly known as the Country Squires Project, Sharpe Army Depot, and McKinley Corridor. The Stonebridge development has been fully completed. The Sharpe Army Depot was included within the city limits in 1989 and has water, sewer, and storm drainage services solely provided by the U.S. Army. The City plans to connect portions of the Sharpe Army Depot to its water and sewer systems in 2019. Currently, only an emergency intertie exists. With the exception of a forcemain to pass through Gateway and South Lathrop, servicing McKinley Corridor, the City is not planning additional drainage facilities. Many of the existing Lathrop Industrial Area developments are required to maintain on-site detention facilities.

*MOSSDALE LANDING*

Mosssdale Landing is a mixed-use master planned community that is anticipated to be completed by 2030. The Mosssdale Village planning area is relatively flat, with runoff directed through a series of ditches and basins that are ultimately pumped into the San Joaquin River. Currently, runoff is conveyed mostly in agricultural ditches that have very limited capacity. Because high water elevations in the San Joaquin River during storm events are higher than anticipated grades within the development area, pump stations have been proposed to remove runoff. Detention basins are also likely to be needed to mitigate potential increases in peak runoff during large events and to provide water quality treatment; this development is partially complete.

## 3.0 COMMUNITY SERVICES AND UTILITIES

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### *NORTHERN LATHROP*

The majority of the north area specific plan (2,101 acres) is located north of the Central Lathrop area and west of I-5. The *Northern Area Portion Master Plan of Drainage* was developed to identify the facilities required to provide 100-year flood protection for the Stonebridge development. The Stonebridge development was fully constructed in 2006, meets current City criteria, and has a constructed stormwater outfall to the San Joaquin River.

### *RIVER ISLANDS*

The 4,995-acre River Islands development is located west of the San Joaquin River and east of Paradise Cut on the Stewart Tract. The development proposes a mixture of low, medium, and high density residential units, which are currently under construction in phases. The project's estimated completion date is 2040. The original plan to develop this area was approved in 1996 and noted that the predominate drainage mechanisms were historically roadside ditches pumped to Paradise Cut. The report noted that Paradise Cut water surface elevations are influenced by other agricultural discharges, the San Joaquin River, and Old River. Under the guidance of the updated *2003 West Lathrop Specific Plan*, public storm drain facilities are currently under construction to serve the proposed development, as it is constructed. The new collection system is comprised of gravity mains, detention, pump stations and outfalls that will manage drainage and mitigate runoff volume, peak flow rates, and water quality impacts of the development. As of the end of 2017, seven neighborhoods within River Islands were completed.

### *SOUTH LATHROP*

The area described as South Lathrop in the *City of Lathrop Storm Drain Master Plan* has since been broken into two planning areas: the *Lathrop Gateway Business Park Specific Plan* proposes commercial and industrial development of 384 acres north of Highway 120 and the *South Lathrop Specific Plan* that includes approximately 300 acres south of Highway 120 are both slated to be built out by 2025. The plans outline existing drainage facilities as a series of agricultural ditches, roadside ditches and retention basins. Public storm drain facilities are planned for construction starting in the fall of 2018 for South Lathrop and winter of 2018 for Lathrop Gateway Business Park to serve the proposed developments. The new drainage systems will be comprised of gravity mains, detention facilities, pump stations with adjoining force mains, and outfalls. Infiltration from high groundwater into the collection system is a concern.

## REGIONAL FLOOD CONTROL

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Due to its central location in the Sacramento-San Joaquin Delta, the City is threatened by seasonal flooding from surrounding waterways, including the San Joaquin River, Old River, and Paradise Cut. High flows in the San Joaquin River system can occur during intense precipitation events occurring between November and April. High river flows may also be sustained during upstream reservoir release periods during snowmelt from April through June. The most significant mapped flood hazard is the San Joaquin River, which flows from south to north, along the western edge of the City. The rivers surrounding the City are leveed, and although the city's developed areas are outside of the Federal Emergency Management Agency (FEMA) 100-year Special Flood Hazard Area, as shown on Flood Insurance Rate Maps (FIRMs) 06077C0585-0620, it may be subject to flooding in the event of a levee failure. Protection from regional flooding is a collaborative effort between Federal, State, and local entities.

The City's primary flood protection facilities are levees constructed by the US Army Corps of Engineers (USACE) and local interests, and maintained and improved by Reclamation Districts (RD) 17, RD 2107, and RD 2062. The USACE operates upstream reservoirs, which control river flows and they own the Lower San Joaquin River and Tributaries "Project levees", which were constructed before 1966. In addition to the

USACE “Project levees”, there are two segments of “non-project levees” located in RDs 17 and 2062 that protect the City.

In partnership with the regional San Joaquin Area Flood Control Agency (SJAFCFA), the Reclamation Districts have primary responsibility for operating, inspecting and correcting problems with levees and other structures. Operation and maintenance costs are covered by property taxes, but the costs of major improvements must be met with State and federal funding managed through cooperative agreements. RD 2107 includes Dell’Osso Farms and other areas south of the Union Pacific Railroad and southeast of I-5. RD 2062 includes the River Islands master planned community located on the Stewart Tract. RD 17 includes land east of the San Joaquin River in the Cities of Lathrop, Manteca, Stockton, and San Joaquin County. Figure 3.1-4 shows the flood control infrastructure within the city; the Reclamation District boundaries are provided in Figure 3.1-4.

### **Major Drainage Issues and Opportunities**

The City’s planned urban expansion will require extensive improvements to the existing drainage system. The City’s current system of development-driven specific planning presents a challenge to the City’s ability to assess and plan for storm drainage issues on a City-wide level. Since the City does not have complete data on existing storm drainage infrastructure, it is difficult to verify whether sufficient capacity will be available for buildout (West Yost Associates, 2018).

Two significant shifts in policy have impacted levees in recent years: in 2006, FEMA undertook a map modernization process in the area to better reflect the risks posed by inadequate levee maintenance, and in 2007, the State of California adopted a new standard of flood protection in urban areas. Both of these changes have resulted in strengthening and raising regional levees to reduce flood risk. The impacts of these changes are described below.

#### *FEMA’S MAP MODERNIZATION*

During FEMA’s map modernization process, SJAFCFA and the local RDs were required to provide data and information to verify that levees that were shown on FEMA’s FIRMs provide 100-year protection. Over a period from 2006 to 2010, compliance was demonstrated for levees protecting developed areas of the city. However, the areas south and east of River Islands are no longer considered to be accredited due to structural concerns, as shown on the updated FIRMs, published in 2009. Flood protection for new development in these areas is a concern.

#### *SENATE BILL 5*

In 2007, the State of California approved Senate Bill 5 (SB5) establishing the State Standard for Flood Protection in urban areas, mandating protection from the 200-year flood event. This level of protection is known as the Urban Level of Protection (ULOP). SB5, requires 200-year flood protection for urban and urbanizing areas no later than 2025. An urban area is defined as “a developed area in which there are 10,000 residents or more.” An urbanizing area as “a developed area or an area outside a developed area that is planned or anticipated to have 10,000 residents or more within the next 10 years.” After July 2016, new development exposed to more than three feet of potential flood depth during the 200-year event is prohibited unless the local land use agency certifies that protection has been provided or that “adequate progress” has been made toward provision of 200-year flood protection by 2025. The City of Lathrop, City of Manteca, RD 17, and RD 2062 are in the process of evaluating flooding risk, existing levee protection, and improvements that may supplement current infrastructure to provide a 200-year level of protection. The status of the evaluation of each area is as follows:

### 3.0 COMMUNITY SERVICES AND UTILITIES

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- The existing RD 17 levees currently do not meet the DWR Urban Levee Design Criteria (ULDC) standards adopted in May 2012, and the existing levees are not currently certified to provide 200-year protection. Accordingly, Lathrop and Manteca, in coordination with RD 17, are jointly pursuing efforts to achieve ULOP by 2025. The *RD 17 Area: 2017 Annual Adequate Progress Report Update* outlines the plan for flood protection through the year 2025 consisting of ongoing Levee Seepage Repair Project and other improvements that will achieve the 200-year requirements.
- Similarly, the existing RD 2062 levees do not currently meet the DWR ULDC standards. As outlined in the *RD 2062 River Islands at Lathrop Phase I Area Report of Adequate Progress Towards an Urban Level of Flood Protection*, the developers of this area have decided on a staged approach to flood control. As buildout is achieved in phases, the protected area likewise will increase in advance of each new development phase. The developers plan to achieve 200-year flood protection by the year 2025.
- RD 2107 is not currently protected from the 100-year flood, does not include existing or planned urban areas and so does not intend to provide ULOP.

### 3.1.4 SOLID WASTE

Republic Services, a private garbage collection company, provides residential (single family and multi-family) and commercial garbage, recycling, and green waste collection services within the city limits. The City also allows industrial users to contract with an alternate garbage collection company (Waste Management).

#### REGULATORY FRAMEWORK

##### *FEDERAL*

#### **Resource Conservation and Recovery Act**

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to address the huge volumes of municipal and industrial solid waste generated nationwide. After several amendments, the current Act governs the management of solid and hazardous waste and underground storage tanks (USTs). RCRA was an amendment to the Solid Waste Disposal Act of 1965. RCRA has been amended several times, most significantly by the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA is a combination of the first solid waste statutes and all subsequent amendments. RCRA authorizes the Environmental Protection Agency (EPA) to regulate waste management activities. RCRA authorizes states to develop and enforce their own waste management programs, in lieu of the Federal program, if a state's waste management program is substantially equivalent to, consistent with, and no less stringent than the Federal program.

##### *STATE*

#### **California Integrated Waste Management Act (AB 939 and SB 1322)**

The California Integrated Waste Management Act of 1989 (AB 939 and SB 1322) requires every city and county in the state to prepare a Source Reduction and Recycling Element to its Solid Waste Management Plan that identifies how each jurisdiction will meet the mandatory state waste diversion goals of 25% by 1995 and 50% by 2000. The purpose of AB 939 and SB 1322 is to “reduce, recycle, and re-use solid waste generated in the state to the maximum extent feasible.” The term “integrated waste management” refers to the use of a variety of waste management practices to safely and effectively handle the municipal solid waste stream with the least adverse impact on human health and the environment. The Act has established a waste management hierarchy, as follows: Source Reduction; Recycling; Composting; Transformation; and Disposal.

#### **California Integrated Waste Management Board Model Ordinance**

Subsequent to the Integrated Waste Management Act, additional legislation was passed to assist local jurisdictions in accomplishing the goals of AB 939. The California Solid Waste Re-use and Recycling Access Act of 1991 (§42900-42911 of the Public Resources Code) directs the California Integrated Waste Management Board (CIWMB) to draft a “model ordinance” relating to adequate areas for collecting and loading recyclable materials in development projects. The model ordinance requires that any new development project, for which an application is submitted on or after September 1, 1994, include “adequate, accessible, and convenient areas for collecting and loading recyclable materials.” For subdivisions of single family detached homes, recycling areas are required to serve only the needs of the homes within that subdivision.

### **California's Mandatory Commercial Recycling Law (AB 341)**

Assembly Bill (AB) 341 directed CalRecycle to develop and adopt regulations for mandatory commercial recycling. CalRecycle initiated formal rulemaking with a 45-day comment period beginning Oct. 28, 2011. The final regulation was approved by the Office of Administrative Law on May 7, 2012. The purpose of AB 341 is to reduce GHG emissions by diverting commercial solid waste to recycling efforts and to expand the opportunity for additional recycling services and recycling manufacturing facilities in California.

Beginning on July 1, 2012, businesses have been required to recycle, and each jurisdiction has implemented programs that include education, outreach, and monitoring. Jurisdictions were required to start reporting on their 2012 Electronic Annual Report (due Aug. 1, 2013) on their initial education, outreach, and monitoring efforts, and, if applicable, on any enforcement activities or exemptions implemented by the jurisdiction.

In addition to Mandatory Commercial Recycling, AB 341 sets a *statewide* goal for 75 percent disposal reduction by the year 2020. This is not written as a 75 percent diversion mandate for each jurisdiction. The 50 percent disposal reduction mandate still stands for cities, counties, and State agencies (including community colleges) under AB 939. CalRecycle continues to evaluate program implementation as it has in the past through the Annual Report review process for entities subject to either AB 939.

#### *LOCAL*

### **Lathrop Municipal Code, Chapter 8.16: Garbage Collection and Disposal**

Section 8.16 of the Lathrop Municipal Code provides rules and regulations regarding garbage collection and disposal. It includes a list of hazardous materials (8.16.050), prohibitions on the burning and burial of solid waste (8.16.060), rights of the City related to solid waste collection and transportation (8.16.090), a list of requirements for the contractor for solid waste collection and transportation (8.16.100), restrictions on solid waste collection and transportation (8.16.110), a description of billing and collection fees (8.16.160), the garbage collection rate schedule (8.16.170), permit requirements (8.16.190), and a description of fees and other requirements.

## WASTE COLLECTION SERVICES

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The City of Lathrop has an exclusive contract with Republic Services to collect solid waste, recycling, and green waste from the residential and commercial sector. Republic Services is a private garbage collection company, provides residential (single family and multi-family) and commercial garbage, recycling, and green waste collection services within the city limits. Republic Services is the second largest provider of non-hazardous solid waste collection, transfer, disposal, recycling, and energy services in the United States, as measured by revenue. Republic Services operates in 41 states and Puerto Rico through 340 collection operations, 201 transfer stations, 193 active landfills, 67 recycling centers, 8 treatment, recovery and disposal facilities, and 12 salt water disposal wells. Republic also operated 69 landfill gas and renewable energy projects and had post-closure responsibility for 126 closed landfills. Republic Industries serves 14 million customers in total (throughout the United States). Refuse, recycling, and green waste bins are picked up once per week in the City of Lathrop.

The City of Lathrop has a three (3) cart system for the collection of garbage, recycling and green waste. The three-cart system was established to enable residents to assist in reducing the amount of waste that is dumped in landfills. Garbage service is mandatory within the City of Lathrop and Republic Services provides residential garbage service to City of Lathrop residents. Recycling service is provided for

newspapers, cardboard (including cereal boxes, soda boxes, etc.), glass bottles and jars, aluminum, tin, steel, plastic containers, and all junk mail and phone books.

## WASTE DISPOSAL FACILITIES

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The vast majority (77%) of landfill disposal from the City of Lathrop in 2016 (the latest year of information available) went to Forward Landfill. Other landfills that received relatively small amounts of waste from the City of Lathrop in 2016 included:

- Altamont Landfill & Resource Recovery;
- Azusa Land Reclamation Company Landfill;
- Fink Road Landfill;
- Foothill Sanitary Landfill;
- L and D Landfill;
- North County Landfill & Recycling Center;
- Potrero Hills Landfill;
- Recology Hay Road;
- Sacramento County Landfill (Kiefer).

### Forward Landfill

The Forward Landfill is a solid waste disposal site, located at 9999 South Austin Road in Manteca. The landfill operates under Permit 39-AA-0015 (issued on January 3, 2012). The Forward Landfill is owned and operated by Forward, Inc. (an Allied Waste North America subsidiary), and contains a total of 354.5 acres of disposal acreage. The landfill has a permitted traffic volume of 620 vehicles per day. Forward Landfill has a remaining landfill capacity of 22,100,000 tons, and has a current maximum permitted throughput of 8,668 tons per day. It has a total maximum capacity of 51,040,000 cubic yards. The landfill has a cease operation date of January 1, 2020; however, the Forward Landfill is currently undergoing an expansion that would allow disposal at the landfill to continue until approximately 2036. This expansion would increase the remaining landfill capacity by an addition 8,120,000 cubic yards beyond currently permitted levels.<sup>2</sup>

### Other Landfills

The nine other landfills that received solid waste from the City of Lathrop in 2016 are shown in Table 3.1-3. Three landfills received Alternative Daily Cover (ADC) from Lathrop (Fink Road Landfill, L & D Landfill, and Vasco Road Sanitary Landfill). Alternative daily cover (ADC) means cover material other than earthen material placed on the surface of the active face of a municipal solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter, and scavenging.

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<sup>2</sup> Draft Supplemental Environmental Impact Report Forward Inc. Landfill 2018 Expansion Project

### 3.0 COMMUNITY SERVICES AND UTILITIES

**TABLE 3.1-3: LANDFILLS EXISTING DAILY CAPACITY AND ESTIMATES CLOSURE DATE**

LANDFILL	DAILY CAPACITY (TONS/DAY)	ANNUAL TONNAGE DISPOSED BY LATHROP IN 2016	ESTIMATED CLOSURE DATE
Altamont Landfill & Resource Recovery	11,150	227	1/01/2025
Azusa Land Reclamation Co. Landfill	8,000	1	1/01/2045
Fink Road Landfill	2,400	436	12/01/2023
Foothill Sanitary Landfill	1,500	6,456	12/31/2082
Forward Landfill, Inc.	8,668	26,228	01/01/2020
L and D Landfill	4,125	125	01/01/2023
North County Landfill & Recycling Center	825	9	12/31/2048
Potrero Hills Landfill	4,330	451	02/14/2048
Recology Hay Road	2,400	20	01/01/2077
Sacramento County Landfill (Kiefer)	No data	156	No data

SOURCE: CAL RECYCLE 2018: [HTTP://WWW.CALRECYCLE.CA.GOV/SWFacilities/directory/search.aspx](http://www.calrecycle.ca.gov/SWFacilities/directory/search.aspx). ACCESSED APRIL 2018.

### SOLID WASTE GENERATION RATES AND VOLUMES

The California Department of Resources Recycling and Recovery (CalRecycle) tracks and monitors solid waste generation rates on a per capita basis. Per capita solid waste generation rates and total annual solid waste disposal volumes for the City of Lathrop between 2011 and 2016 are shown in Table 3.1-4 below.

**TABLE 3.1-4: SOLID WASTE GENERATION RATES IN THE CITY OF LATHROP**

YEAR	WASTE GENERATION RATES (POUNDS/PERSON/DAY)		TOTAL DISPOSAL TONNAGE (TONS/YEAR)
	PER RESIDENT	PER EMPLOYEE	
2011	9.8	29.8	33,273
2012	7.8	23.2	26,908
2013	9.8	30.9	34,196
2014	8.7	23.9	31,486
2015	8.0	19.8	29,691
2016	8.5	22.4	34,296

SOURCE: [HTTP://WWW.CALRECYCLE.CA.GOV/LGCentral/reports/jurisdiction/reviewreports.aspx](http://www.calrecycle.ca.gov/LGCentral/reports/jurisdiction/reviewreports.aspx) ACCESSED APRIL 2018.

As shown in the above table, for the years 2011 through 2016 (the latest year of data available), the per capita waste generation rate in the City of Lathrop was at the lowest level in 2012; the per employee waste generation rate was at the lowest level in 2015; and the total annual disposal tonnage in Lathrop was at their lowest level (during this period) in 2012. The City of Lathrop complied with State requirements to reduce the volume of solid waste through recycling and reuse of solid waste. The City of Lathrop achieved the City's per capita disposal target rates for 2016 of 20.4 and 41.0 pounds per person per day for residents and employees, respectively, as established by CalRecycle.



### 3.1.5 ELECTRICITY AND NATURAL GAS

The following discussion describes the electricity and natural gas services that are available to the City of Lathrop.

#### REGULATORY FRAMEWORK

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##### *STATE*

#### **Public Utilities Commission**

The California Public Utilities Commission (PUC) is the primary State agency that regulates privately owned public utilities in California. These utilities include telecommunications, electricity, natural gas, water, railroad, rail transit, and passenger transportation companies. A primary role of the PUC is to authorize utility rate changes. It also establishes service standards and safety rules, monitors the safety of utility and transportation operations, prosecutes unlawful marketing and billing activities, and oversees the merger and restructure of utility corporations.

#### **Bioenergy Action Plan – Executive Order #S-06-06**

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower, and directs State agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20% of its biofuels within California by 2010, 40% by 2020, and 75% by 2050. The executive order also calls for the State to meet a target for use of biomass electricity, including biomass cogeneration facilities.

#### **Senate Bill 14 and Assembly Bill 64**

Prior to the passage of SB 14 and AB 64 in 2009, California law required investor-owned utilities (IOUs) and energy service providers (ESPs) to increase their existing purchases of renewable energy by 1% of sales per year such that 20% of their retail sales, as measured by usage, are procured from eligible renewable resources (including biomass cogeneration) by December 31, 2010. This is known as the Renewable Portfolio Standard (RPS).

SB 14 and AB 64 require IOUs, POUs, and ESPs to increase their purchases of renewable energy such that at least 33% of retail sales are procured from renewable energy resources by December 31, 2020. For IOUs and ESPs, this is required only if the PUC determines that achieving these targets will result in just and reasonable rates.

#### **Title 24**

Title 24, Part 6, of the California Code of Regulations is also known as California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Title 24 was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2016 Energy Efficiency Standards went into effect on January 1, 2017. Title 24, Part 11, of the California Code of Regulations establishes the California Green Building Standards Code (CalGreen). Initially, the code requirements were voluntary; however, CalGreen became mandatory in 2011. CalGreen addresses five areas of green building: 1) planning and design, 2) energy efficiency, 3) water efficiency and conservation, 4) material conservation and resources efficiency, and 5) environmental quality. The mandatory requirements are separated into non-residential and residential projects. CalGreen also

### 3.0 COMMUNITY SERVICES AND UTILITIES

includes two optional tiers: Tier 1 and Tier 2. The tiers employ higher thresholds that jurisdictions may adopt or that projects may meet voluntarily.

#### EXISTING SETTING

Pacific Gas and Electric Company (PG&E) provides electrical and natural gas services to residences and businesses throughout the City of Lathrop. PG&E's service area is over 70,000 square miles, located throughout northern and central California. PG&E maintains approximately 42,000 miles of natural gas distribution pipelines, 6,700 miles of gas transmission pipelines, and provides approximately 970 billion cubic feet of natural gas to its customers per year.

PG&E generates electric power from many sources, including renewable, coal, hydroelectric powerhouses, natural gas, and nuclear energy sources. The electricity power mix for PG&E in 2016 is shown in the second column of Table 3.1-5. In 2016, approximately 69 percent of the electricity PG&E delivered to its customers came from greenhouse gas-free energy sources, which includes eligible renewable, large hydroelectric, and nuclear energy sources. The third column of Table 3.1-5 shows the electricity power mix for the State of California as a whole. Approximately 44 percent of the electricity power mix for the State of California as a whole in 2016 was represented by eligible renewable energy sources and/or energy sources that do not directly generate greenhouse gases. As shown, PG&E generates a larger proportion of eligible renewable and greenhouse gas-free energy sources than the State of California as a whole.

**TABLE 3.1-5: PACIFIC GAS AND ELECTRIC – 2016 POWER CONTENT LABEL**

<i>ENERGY SOURCES</i>	<i>PG&amp;E POWER MIX</i>	<i>TOTAL CALIFORNIA POWER MIX**</i>
<b>Eligible Renewable</b>	<b>33%</b>	<b>25%</b>
Biomass & biowaste	4%	2%
Geothermal	5%	4%
Eligible hydroelectric	3%	2%
Solar	13%	8%
Wind	8%	9%
<b>Coal</b>	<b>0%</b>	<b>4%</b>
<b>Large Hydroelectric</b>	<b>12%</b>	<b>10%</b>
<b>Natural Gas</b>	<b>17%</b>	<b>37%</b>
<b>Nuclear</b>	<b>24%</b>	<b>9%</b>
<b>Other</b>	<b>0%</b>	<b>0%</b>
<b>Unspecified sources*</b>	<b>14%</b>	<b>15%</b>
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

SOURCE: [HTTP://WWW.ENERGY.CA.GOV/PCL/LABELS/2016\\_LABELS/PACIFIC\\_GAS\\_AND\\_ELECTRIC.PDF](http://www.energy.ca.gov/pcl/LABELS/2016_LABELS/PACIFIC_GAS_AND_ELECTRIC.PDF)

\* "UNSPECIFIED SOURCES OF POWER" MEANS ELECTRICITY FROM TRANSACTIONS THAT ARE NOT TRACEABLE TO SPECIFIC GENERATION SOURCES.

\*\* PERCENTAGES ARE ESTIMATED ANNUALLY BY THE CALIFORNIA ENERGY COMMISSION BASED ON THE ELECTRICITY SOLD TO CALIFORNIA CONSUMERS DURING THE IDENTIFIED YEAR.

Infrastructure to deliver electricity and natural gas throughout the City of Lathrop is currently in place. PG&E can generally can provide these services to new development on request.

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### 3.0 COMMUNITY SERVICES AND UTILITIES

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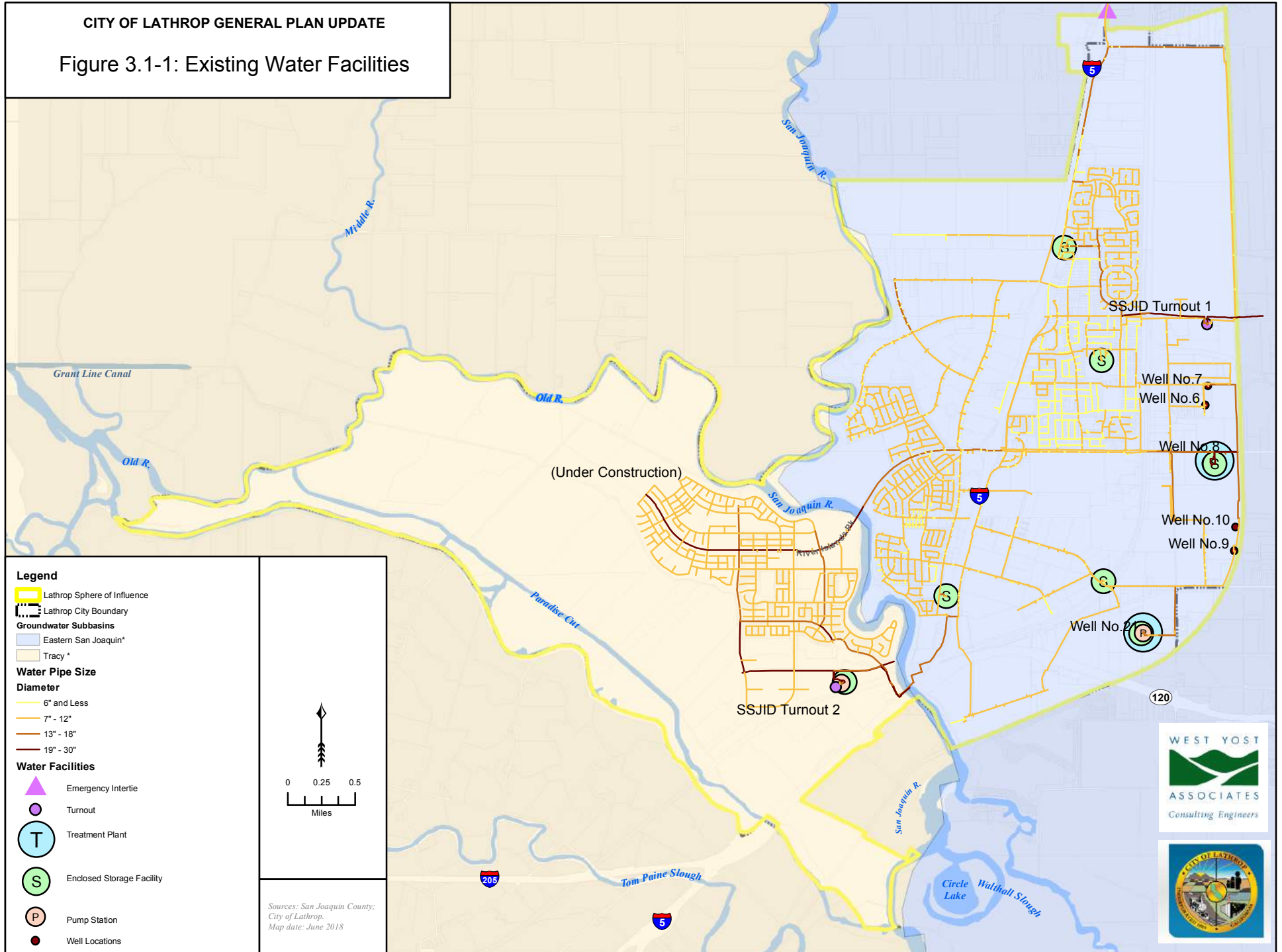
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Figure 3.1-1: Existing Water Facilities



Notes: \* In 2018 a jurisdictional groundwater basin boundary modification request was approved to modify the boundaries of the Eastern San Joaquin (ESJ) Subbasin and the Tracy Subbasin to align the City of Lathrop entirely within the Tracy Subbasin. Water meters, water valves, fire hydrants, and water repair locations are not shown on this map.

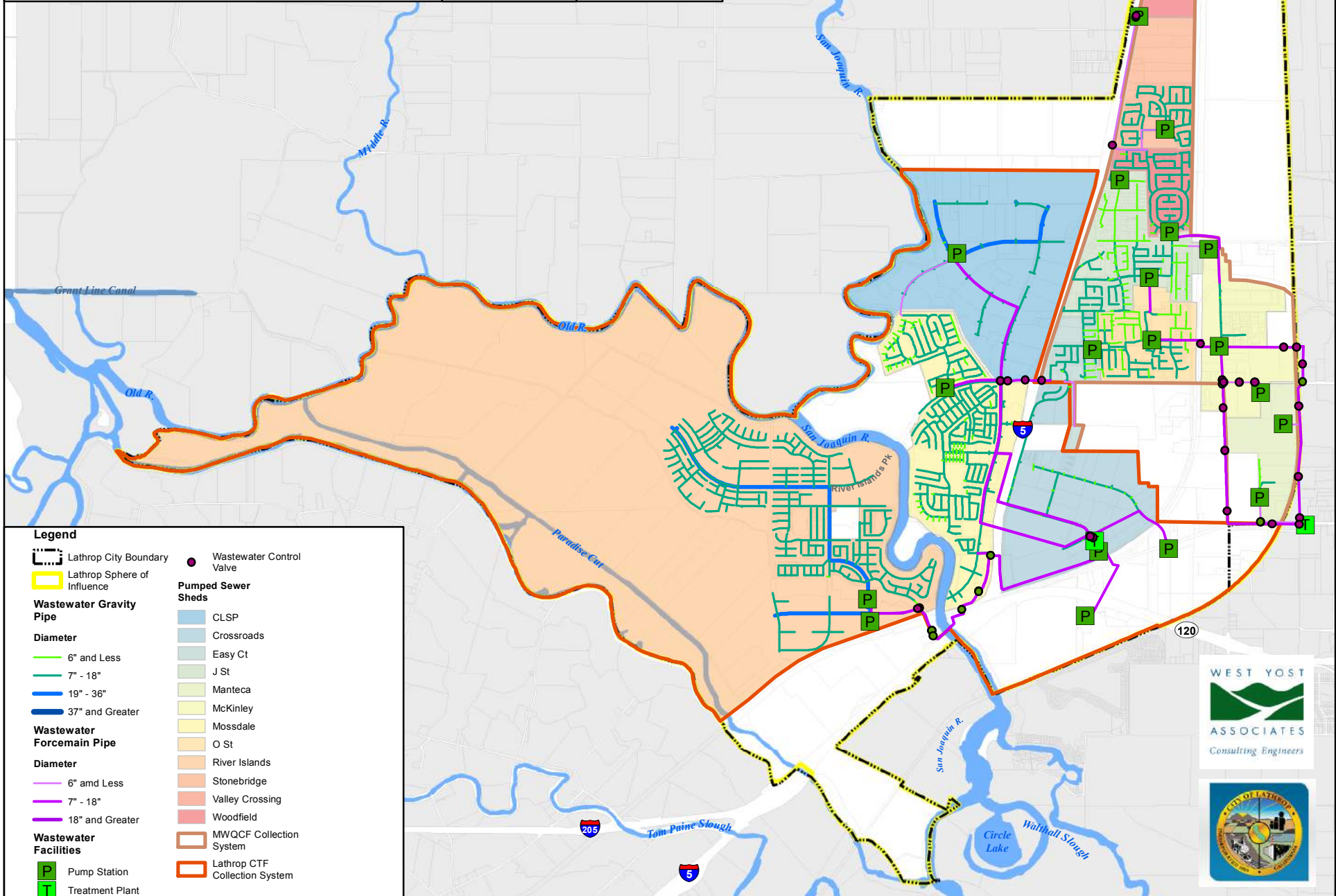
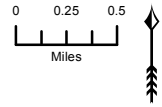
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CITY OF LATHROP GENERAL PLAN UPDATE

Figure 3.1-2: Existing Sewer Facilities

Sources: San Joaquin County;  
City of Lathrop;  
Map date: June 2018



Legend

- Lathrop City Boundary
- Lathrop Sphere of Influence
- Wastewater Gravity Pipe**
- Diameter**
- 6" and Less
- 7" - 18"
- 19" - 36"
- 37" and Greater
- Wastewater Forcemain Pipe**
- Diameter**
- 6" and Less
- 7" - 18"
- 18" and Greater
- Wastewater Facilities**
- Pump Station
- Treatment Plant
- Wastewater Control Valve
- Pumped Sewer Sheds**
- CLSP
- Crossroads
- Easy Ct
- J St
- Manteca
- McKinley
- Mossdale
- O St
- River Islands
- Stonebridge
- Valley Crossing
- Woodfield
- MWQCF Collection System
- Lathrop CTF Collection System

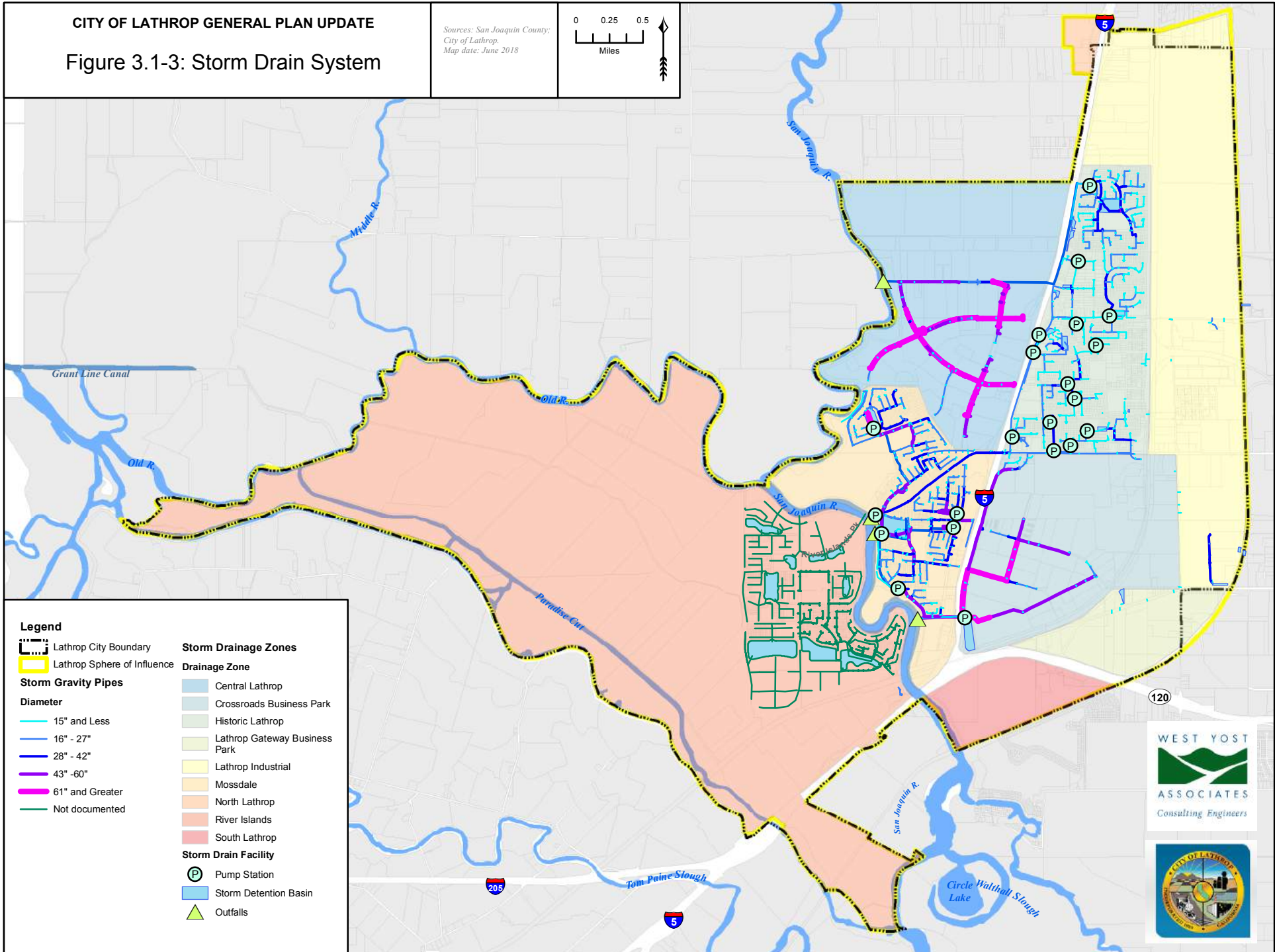
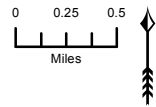


Notes:  
Privately owned wastewater structures and all wastewater manholes not shown on this map.

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Figure 3.1-3: Storm Drain System

Sources: San Joaquin County;  
City of Lathrop;  
Map date: June 2018



**Legend**

- |                             |                               |
|-----------------------------|-------------------------------|
| Lathrop City Boundary       | <b>Storm Drainage Zones</b>   |
| Lathrop Sphere of Influence | <b>Drainage Zone</b>          |
| <b>Storm Gravity Pipes</b>  | Central Lathrop               |
| <b>Diameter</b>             | Crossroads Business Park      |
| 15" and Less                | Historic Lathrop              |
| 16" - 27"                   | Lathrop Gateway Business Park |
| 28" - 42"                   | Lathrop Industrial            |
| 43" - 60"                   | Mossdale                      |
| 61" and Greater             | North Lathrop                 |
| Not documented              | River Islands                 |
|                             | South Lathrop                 |
|                             | <b>Storm Drain Facility</b>   |
|                             | Pump Station                  |
|                             | Storm Detention Basin         |
|                             | Outfalls                      |

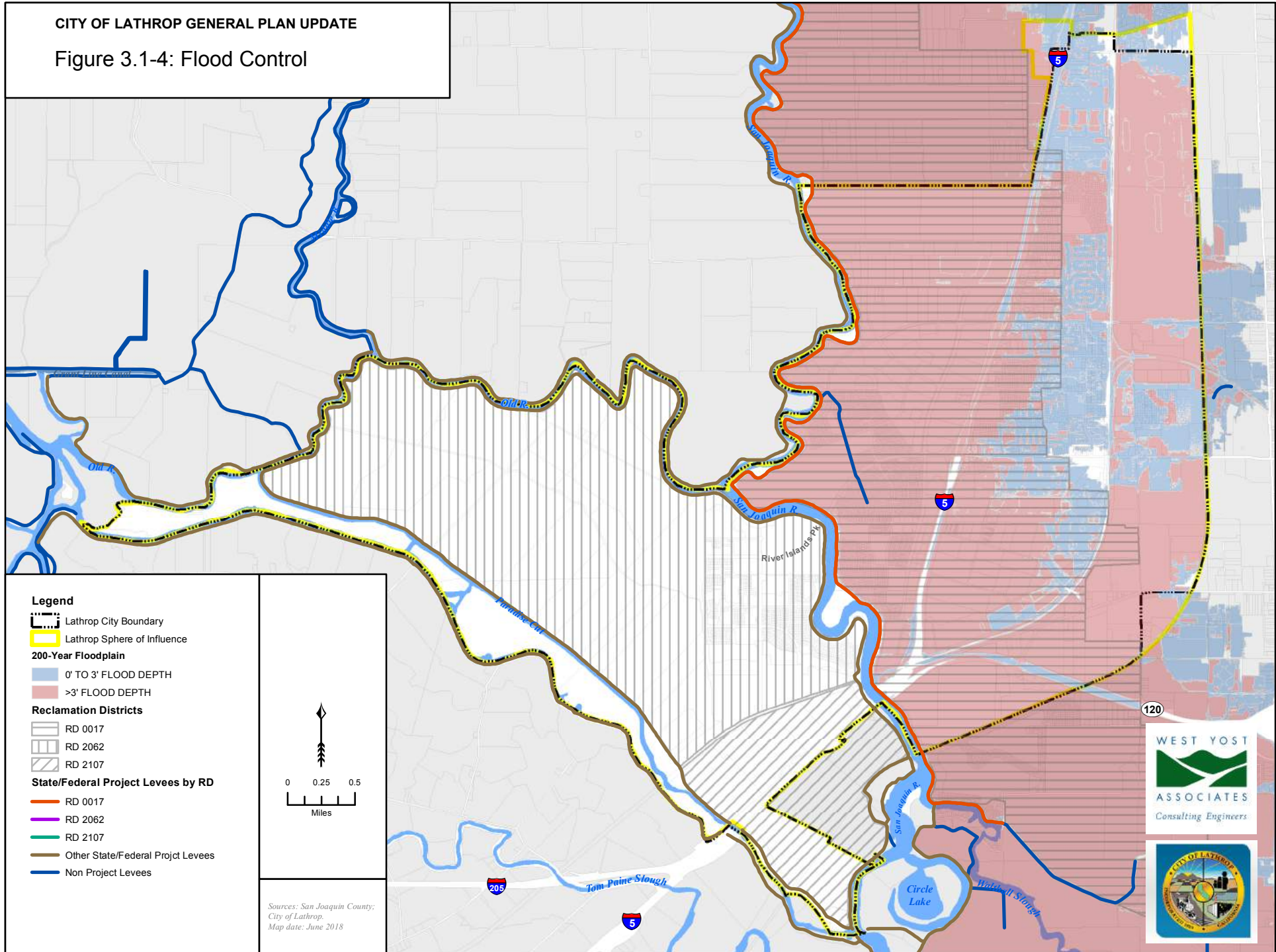


Notes:  
Storm drain manholes and inlets not shown on this map.

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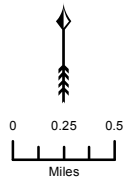
CITY OF LATHROP GENERAL PLAN UPDATE

Figure 3.1-4: Flood Control



**Legend**

- Lathrop City Boundary
- Lathrop Sphere of Influence
- 200-Year Floodplain**
- 0' TO 3' FLOOD DEPTH
- >3' FLOOD DEPTH
- Reclamation Districts**
- RD 0017
- RD 2062
- RD 2107
- State/Federal Project Levees by RD**
- RD 0017
- RD 2062
- RD 2107
- Other State/Federal Project Levees
- Non Project Levees



Sources: San Joaquin County;  
City of Lathrop.  
Map date: June 2018



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## 3.2 PUBLIC SAFETY SERVICES

This section addresses the provision of public safety services in the City of Lathrop, including fire protection, law enforcement, and other public safety services.

Data from the Lathrop Manteca Fire District (LMFD), the French Camp-McKinley Fire District (French Camp) were the primary sources of information within Section 3.2.1 (Fire Protection); data from the San Joaquin County Sheriff's Department was the primary source of information within Section 3.2.2 (Police Protection); and data from the City of Lathrop was the primary source of information within Section 3.2.3 (Miscellaneous Public Safety). Data from the *City of Lathrop Final Municipal Service Review and Sphere of Influence Plan* (February 2016) was also used as a source of information.

### 3.2.1 FIRE PROTECTION

The Lathrop Sphere of Influence (SOI) is covered by two independent Fire Protection Districts, the Lathrop-Manteca Fire Protection District (LMFD) and French Camp-McKinley Fire District (French Camp). The LMFD provides fire protection services for all lands within the City of Lathrop, including lands south of Roth Road in addition to providing service to some 84.7 square miles of rural area around Manteca (in the southern San Joaquin County area). The locations of the two LMFD fire stations in Lathrop are shown on Figure 3.2-1.

## REGULATORY FRAMEWORK

### STATE

#### California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment" the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

The State of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

#### Emergency Response/Evacuation Plans

The State of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

#### California Fire Protection Code

The California Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. Topics addressed in the Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions to protect and assist first responders, industrial processes, and many other general and specialized fire safety requirements for new existing buildings and premises.

## 3.0 COMMUNITY SERVICES AND UTILITIES

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### UNIFORM FIRE CODE

The Uniform Fire Code with the State of California Amendments contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The Fire Code contains specialized technical regulations related to fire and life safety.

### CALIFORNIA HEALTH AND SAFETY CODE

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code. This includes regulations for building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

### NFPA 1710

The NFPA 1710 Standards are applicable to urban areas and where staffing is comprised of career Firefighters. According to these guidelines, a career fire department needs to respond within six minutes, 90 percent of the time with a response time measured from the 911 call to the time of arrival of the first responder.

The standards are divided as follows:

- Dispatch time of one (1) minute or less for at least 90 percent of the alarms
- Turnout time of one (1) minute or less for EMS calls (80 seconds for fire and special operations response)
- Fire response travel time of four (4) minutes or less for the arrival of the first arriving engine company at a fire incident and eight (8) minutes or less travel time for the deployment of an initial full alarm assignment at a fire incident
- Eight (8) minutes or less travel time for the arrival of an advanced life support (ALS) (4 minutes or less if provided by the fire department)

### *LOCAL*

#### **City of Lathrop Municipal Code**

The City of Lathrop Municipal Code has ordinances related to fire protection. These include Chapter 3.20 (Impact Fee Ordinance), which requires development impact fees to be charged to fund improvements to the City's infrastructure. Chapter 1.12 (Administrative Enforcement Procedures) describes the authority of the LMFD fire marshal in determining imminent health and safety hazards, and the powers associated with such a determination. Chapter 16.28 (Improvements) describes the requirements of a subdivider to provide and connect water mains and fire hydrants to the City's water system, with approval of the number and location of fire hydrants to be determined by the Fire Chief.

#### **City of Lathrop General Plan**

The existing City of Lathrop General Plan has the following policies related to fire protection:



**GOAL #7 – Seismic Hazards: Goals for achieving and maintaining safety from seismic events include preventing serious injury, loss of life, serious damage to critical facilities involving large assemblies of people, and loss of continuity in providing services.**

**POLICY 3.** The present building height limit of 50 feet shall be maintained, with a maximum of four stories. This policy should stay in force until such time that high rise construction is desired and capability for evacuation and fire fighting in upper stories is possible through the availability of appropriate equipment. For Sub-Plan Area #3, at that point in time, the maximum building height shall be 125 feet, with a maximum of ten stories. For the Central Lathrop area, once the appropriate fire fighting equipment is procured for buildings higher than 50', permitted building heights shall be that noted in the Central Lathrop Specific Plan and Design Guidelines.

**POLICY 11.** The City should adopt an Earthquake Disaster Plan in coordination with San Joaquin County and local special districts. The Plan should identify hazards that may occur as the result of an earthquake of major magnitude. The Plan should be sufficiently broad in scope to include the designation of evacuation routes and means to coordinate all local government agencies in assisting local residents in the event of a major earthquake, large-scale fire or explosion, or hazardous chemical spill or release of hazardous air-borne gas.

**POLICY 12.** All lines which are part of the domestic water distribution system should be looped to assure adequate pressure in the event of major fire, earthquake, or explosion. Adequate emergency standby power generation capability should be available at water wells to assure water availability in the event of a major power failure.

**Goal No. #8 – Public Safety Hazards: Goals for public safety seek to accomplish the following:**

- 1. The reduction of loss of life or property due to crime, fire, earthquake, flooding or other disasters or hazards.**
- 2. The provision of adequate medical and emergency services to reduce the effects of natural or man-made disasters.**
- 3. The promotion of citizen awareness and preparedness for emergency/disaster situations or potential for the incidence of crime.**
- 4. The implementation of adequate inter-agency disaster planning.**

**POLICY 1.** The City will continue to give high priority to the support of police protection, and to fire suppression and prevention and life safety functions of the Fire District. Ultimate expansion of the City's fire service is to include additional stations affording adequate response within a maximum of 3-4 minutes to all parts of the urban area.

**POLICY 2.** The City will work to maintain a fire flow standard of 3,000 gpm for all commercial and industrial areas of the community, and 1,500 gpm for residential areas, to assure the capability to suppress urban fires. In strategic areas, the City should provide above ground water storage with capacities sufficient to supply the City for required durations.

**POLICY 6.** The City will seek to reduce the risks and potential for hazards to the public through planning and zoning practices and regulations which avoid hazardous land use relationships, and by the continued and timely adoption of new-edition building and fire codes.

### FIRE PROTECTION SERVICES

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The Lathrop SOI is covered by two independent Fire Protection Districts, the Lathrop-Manteca Fire Protection District (LMFD) and French Camp-McKinley Fire District (French Camp). The LMFD provides fire protection services for all lands within the City of Lathrop, including lands south of Roth Road in addition to providing service to some 84.7 square miles of rural area around Lathrop and Manteca (in the southern San Joaquin County area).

LMFD was established in 1936 to provide fire protection for the township of Lathrop, rural Lathrop and the rural areas surrounding Manteca. The Fire District was organized under the laws of the State of California, Health and Safety Code Section 13800, known as the Fire Protection District law of 1987. LMFD is governed by a five member Board of Directors who are elected at-large to serve a four-year term. Since 1936 the Fire District has developed into a pro-active Fire Department covering 100 square miles, including the City of Lathrop. For 2017, the LMFD was comprised of the annual average of 29 Suppression Firefighters, 23 Reserve Firefighters, and seven Administration Personnel. LMFD Suppression personnel included one Fire Chief, one Battalion Chief, one Deputy Fire Marshal, one Fire Inspector, one Executive Assistant, one Permits Clerk, one Office Assistant, three Acting Battalion Chiefs, nine Captains, three acting Captains, and 15 Firefighters/Engineers (LMFD, 2017). The Fire District is organized to maintain career personnel on duty, 24 hours a day, year round, to respond to emergencies from the fire stations. LMFD has four (4) Fire Stations, two (2) of which are located in the City of Lathrop.

The French Camp District provides fire protection for the rural area primarily south of Stockton and north of Roth Road, both east and west of Interstate 5. French Camp service boundaries include some 16 square miles, including a small portion of Stockton. Approximately 805 acres of the French Camp Fire District are in the Lathrop Area of Interest and approximately 149 acres are in the SOI. The District was established in 1946 to provide fire protection for the French Camp Community and surrounding area. The Fire District was organized under the laws of the State of California, Health and Safety Code Section 13800, known as the Fire Protection District law of 1987. French Camp is governed by a five member Board of Directors who are elected at-large to serve a four-year term. As of 2016, the (French Camp) District consisted of 16 employees, of which 7 are line staff and 9 are reserve personnel (City of Lathrop, 2016). The French Camp and Montezuma Fire Protection Districts rotate Fire Chiefs in order to provide coverage for the respective Fire Stations. The Montezuma Fire Protection District is located west of French Camp and north of LMFD, located outside of the Lathrop SOI.

#### **Existing Facilities and Services**

##### *LATHROP-MANTECA FIRE PROTECTION DISTRICT*

Since the incorporation of Lathrop in 1989, the LMFD has worked with the City Council to develop plans to provide adequate coverage for potential urban growth of the City. This has included the imposition of Fire Facilities Fees for new development as well as a sharing in the Special Sales Tax (Measure C) passed city-wide.

The LMFD boundaries spread over about 100 square miles, with the bulk of the District (70%) within the City limits of Lathrop. Locations of the existing LMFD fire stations are presented in Figure 3.2-1 (Fire Station Locations).

LMFD calls are dispatched along with the Manteca Fire Department, Stockton Fire Department, and Lodi Fire Departments. LMFD tracks the following times segments and continuously works to improve response times. These times are provided from the Stockton Fire Dispatch Center, specific to the City of Lathrop's boundary, which as stated earlier has been the dispatch provider since January 1, 2014:

Time-to-Dispatch: During the time period from January 1<sup>st</sup>, 2015 to October 21<sup>st</sup>, 2015, the total Time-to-Dispatch reported was 90-100 seconds for 90% of the total calls for fire, and 70-80 seconds for 90% of the total Emergency Medical Calls.

Turnout Time: This time is calculated from the receipt of the alarm by the station of unit and ends at the time the unit begins its rolling travel time. Benchmarks for these time standards are 60 seconds 90% of the total Emergency Medical Calls and 80 seconds for 90% of the total fire calls. The LMF<sup>D</sup>'s crews have a turnout time of 64 seconds for 90% of the medical calls received and 86 seconds for 90% of the total fire calls received.

Travel Time: Travel time is the measurement from when the unit rolls toward the call and is completed when it arrives at the dispatched location. The LMF<sup>D</sup>'s travel times to all emergency (Code 3- lights and sirens activated) is 4:08 minutes to 90% of the total emergency calls for service<sup>3,4</sup>.

The Fire Marshal administers the District's fire prevention and code enforcement program. Plan checks are done by the Fire Marshal along with the more complex inspections. Fire Company personnel conduct inspections and annual re-inspections. Additional fire safety programs include smoke detector installation for the elderly and disabled and fire safety and awareness in the schools.

The Fire District responds, not only to fires of all types, but also medical emergencies, traffic accidents, and river rescues. The Fire District is an active member of the San Joaquin County Hazardous Materials Response Team. The Fire District is also part of the Urban Search and Rescue Team (City of Lathrop, 2016).

### *FRENCH CAMP*

The authorized personnel strength of French Camp consists of 16 employees, of which 7 are line staff and 9 are reserve personnel. The French Camp and Montezuma Fire Protection Districts rotate Fire Chiefs in order to provide coverage for the respective Fire Stations. The fire district is organized to maintain three personnel with automatic aid agreements with other agencies. French Camp maintains one Fire Station located at 310 East French Camp Road. This station is staffed by 2 engine companies and is staffed 24-hours per day. The District receives about 1,000 calls per year.

According to response data by Lifecom Dispatch Center, the District's 90 percentile "turnout time" and "travel" times in 2015 were 1:50 minutes and 6:01 minutes respectively to the Roth Road area. These times were below the average 90 percentile time for all rural fire districts at 2:42 minutes turnout time and 7:38 minutes response time.

The Fire District responds, not only to fires of all types, but also medical emergencies, traffic accidents, and river rescues. The Fire District is an active member of the San Joaquin County Hazardous Materials Response Team. The Fire District is also part of the Urban Search and Rescue Team (City of Lathrop, 2016).

### **ISO Rating**

The Insurance Services Office (ISO) rating measures individual fire protection agencies against a national Fire Suppression Rating Schedule which includes such criteria as facilities and support for handling and dispatching fire alarms, first-alarm responses and initial attack, and adequacy of the local water supply for the fire suppression purposes. ISO ratings are on a scale of 1-10 with 1 being the highest rating. In 2013, ISO developed split classifications for some communities, which can represent the risk of loss more

<sup>3</sup> Lathrop-Manteca Fire District, Lathrop-Manteca Fire District Master Plan, 2006

<sup>4</sup> City of Lathrop Municipal Services Review and Sphere of Influence Amendment, 2016

## 3.0 COMMUNITY SERVICES AND UTILITIES

precisely. An example of a split classification system is 4/4X or 4/4Y. The first number refers to the classification of properties within 5 road miles of a fire station and within 1,000 feet of a creditable water supply. The second number, with either the X or Y designation, applies to properties within 5 road miles of a fire station but beyond 1,000 feet of a creditable water supply. ISO generally assigned Class 10 to properties beyond 5 road miles.

### *LATHROP-MANTECA FIRE PROTECTION DISTRICT*

In its most recent report, the ISO Public Classification Program rates the LMFD as a community classification of 3 for the City of Lathrop<sup>5</sup>. This rating is unchanged since the ISO rating for the City of Lathrop in their January 2013 ISO report.

### *FRENCH CAMP*

The ISO Public Classification Program rates the French Camp in their November 2017 report as a community classification of 4/4Y for the District<sup>6</sup>. This is an improvement from the community classification of 4/8b for the District in the ISO November 23, 2010 report.

## Fire Stations

### *LATHROP-MANTECA FIRE PROTECTION DISTRICT*

The LMFD currently operates four fire stations within its service area, which are listed below. Two of the five stations are located within the City of Lathrop (stations 31 and 34), as shown on Figure 3.2-1, while the remaining stations (stations 32, 33 and 35) are located within the City of Manteca.

- **Station 31 (800 E. J Street, Lathrop, CA 95330):** Station 31 acts as the headquarters station for the District, and services a large section of East Lathrop. The boundaries generally run from Interstate 5 at Roth Road to Louise Avenue. Station 31 is staffed with four personnel, with the 4<sup>th</sup> Firefighter/Engineer used as a vacation relief.
- **Station 32 (22701 South Union Road, Manteca, CA 95337):** Station 32 services the Nile Garden district. The boundaries generally include the area from the Highway 120 bypass south. The southern-most boundary for this station is where the San Joaquin and Stanislaus River converge. Station 32 plays a vital role in supporting the City of Lathrop, as well as responding to numerous high-speed vehicle collisions, grass fires, and vehicle fires. Station 32 is staffed with two personnel: one Captain and one Firefighter/Engineer.
- **Station 33 (9121 E. Lathrop Road, Manteca, CA 95336):** Station 33 services the New Haven district, whose boundaries generally include the Mariposa Bridge south to the Jack Tone and Yosemite Avenue intersection. The station services the Raymus Village Development just north of Lathrop Road. This station is staffed with two personnel: one Captain and one Firefighter/Engineer.
- **Station 34 (460 River Islands Parkway, Lathrop, CA 95330):** Station 34 is located on the west side of Interstate 5 within the City of Lathrop. This station officially opened on May 20<sup>th</sup>, 2006. This station responds to calls for service on the west side of Interstate 5 and south of Louise Avenue. Staffing for this station includes one Captain and one Firefighter/Engineer.
- **Station 35 (19001 Somerston Parkway, Lathrop, CA 95330):** Station 35 is located within the River Islands development of the City of Lathrop, west of the San Joaquin River. This station is the

<sup>5</sup> Personal communication with Steven Pickerill, LMFD Deputy Fire Marshall, 11:30am on 8/16/2018.

<sup>6</sup> Personal communication with French Camp Office of Administration and Fire Prevention, 12:20pm on 8/16/2018.

LMFD's newest station and officially opened in April of 2019. This station is also the new location for the LMFD Administrative Offices.

### *FRENCH CAMP*

French Camp currently operates a single fire station located at 310 E. French Camp Road, French Camp, CA. The Station (Station 11-1) is staffed with at least two on-duty personnel and on Duty Chief available 24 hours a day, seven day a week. In addition, the Reserve Firefighter personnel are an important supplemental force to augment the line staff in firefighting duties in fire suppression of structural, wildland, and other types of fires. As of 2015, French Camp expanded fire protection service to the community of Mountain House on a contact basis (City of Lathrop, 2016).

### 3.2.2 LAW ENFORCEMENT

Provided below is a discussion of the law enforcement services in the City of Lathrop. The location of the existing City of Lathrop police station is presented in Figure 3.2-1.

#### REGULATORY FRAMEWORK

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##### *LOCAL*

#### **City of Lathrop General Plan**

The existing City of Lathrop General Plan has the following Policies related to Police Protection:

**GOAL #8 – Public Safety Hazards:** Goals for public safety seek to accomplish the following:

- 1. The reduction of loss of life or property due to crime, fire, earthquake, flooding or other disasters or hazards.**
- 2. The provision of adequate medical and emergency services to reduce the effects of natural or man-made disasters.**
- 3. The promotion of citizen awareness and preparedness for emergency/disaster situations or potential for the incidence of crime.**
- 4. The implementation of adequate inter-agency disaster planning.**

**POLICY 1** – The City will continue to give high priority to the support of police protection, and to fire suppression and prevention and life safety functions of the Fire District. Ultimate expansion of the City's fire service is to include additional stations affording adequate response within a maximum of 3-4 minutes to all parts of the urban area.

**POLICY 6** – Neighborhood watch programs will be encouraged in all residential areas of the City.

#### POLICE PROTECTION SERVICES

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Law enforcement services in the City of Lathrop are provided through contract with the San Joaquin County Sheriff's Department. Lathrop Police Services' officers are Deputy Sheriff's assigned to the City. They have unique training to include traffic enforcement, specific to an incorporated City.

Lathrop Police Services is located at 15597 Seventh Street. Since the City was incorporated, police service has been expanded to include eleven patrol cars. Lathrop Police Services is staffed 24 hours a day in a series of 3 patrol shifts with a minimum of 2 patrol officers per shift. Minimum staffing levels are set at 6 officers per day. Lathrop Police Services has 26 sworn officers, including 1 captain serving as police chief, 1 lieutenant, 3 sergeants, 1 detective, 20 deputy sheriffs and 3 civilian staff. If needed, additional assistance can be summoned under a mutual aid agreement with surrounding cities and the County. Existing police staffing levels in the City are approximately 1.31 per 1,000 residents. The current city-wide priority 1 average response time is 4 minutes. Priority 1 calls are where a threat is posed to life or a crime of violence (City of Lathrop, 2016).

The approval and/or pending development projects in the City will result in additional demand for law enforcement services. Capital costs for new facilities and equipment is funded through development impact fees and operational costs are funded through a combination of an increased tax base,

participation in Community Facility District (CFD) and Measure C funding (A City initiated special tax which does not have a sunset clause).

In 2013 Lathrop City Council commissioned a special study of the Law enforcement services by engaging the expertise of Municipal Resources Group, Inc. (MRG). In a report published on December 10, 2013 the MRG group compared the services provided with the Cities of Ripon, Patterson, Oakdale, Riverbank, Galt, Manteca and Tracy and concluded their Comparative Data Findings which suggests that the City of Lathrop compares favorably on key elements including crime rate, ratio of officers to the population and crime; costs for law enforcement are as low as the average; and the City benefits from the additional revenue sources which fund public safety costs freeing General Fund Revenues for ‘quality of life’ services.

### CRIMES BY CATEGORY IN LATHROP

Statistics on the number of crimes by category of crime in Lathrop during each year for 2016, as reported by the City of Lathrop and the San Joaquin County Sheriff’s Department, is shown in Table 3.2-1 below.

**TABLE 3.2-1: LATHROP POLICE SERVICES CRIME STATISTICS (2016)**

<i>CATEGORY/CRIME</i>	<i>2016</i>
<b>Total Violent Crimes</b>	<b>65</b>
Homicide	1
Rape	4
Robbery	36
Assault	24
<b>Total Property Crimes</b>	<b>517</b>
Burglary	235
Auto Theft	80
Larceny	389
Arson	3

*SOURCE: CITY OF LATHROP, 2017*

As shown in the table, the majority of crimes committed in Lathrop consist of property crimes, primarily larceny. Larceny was the most common property crime. Additionally, in 2016, there was one homicide reported.

### 3.2.3 MISCELLANEOUS PUBLIC SAFETY

#### MULTI-JURISDICTIONAL LOCAL GOVERNMENT EMERGENCY RESPONSE

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The San Joaquin County Office of Emergency Services (OES) is the single coordinating center for major emergency activities. In cooperation with others, OES maintains and oversees the Multi-Hazard Functional Plan, which is the Countywide disaster preparedness program. OES also provides training for first responders, businesses, and other governmental agencies.

#### COMMUNITY EMERGENCY RESPONSE TEAM (CERT)

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The Community Emergency Response Team (CERT) Program educates people about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help. CERT members also are encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their community.

The Lathrop/Manteca Fire District offers CERT training for those community members interested in this type of community service. The training covers many topics of preparedness including:

- Disaster preparedness
- Disaster fire suppression
- Disaster medical operations
- Disaster psychology and team organization
- Disaster simulation

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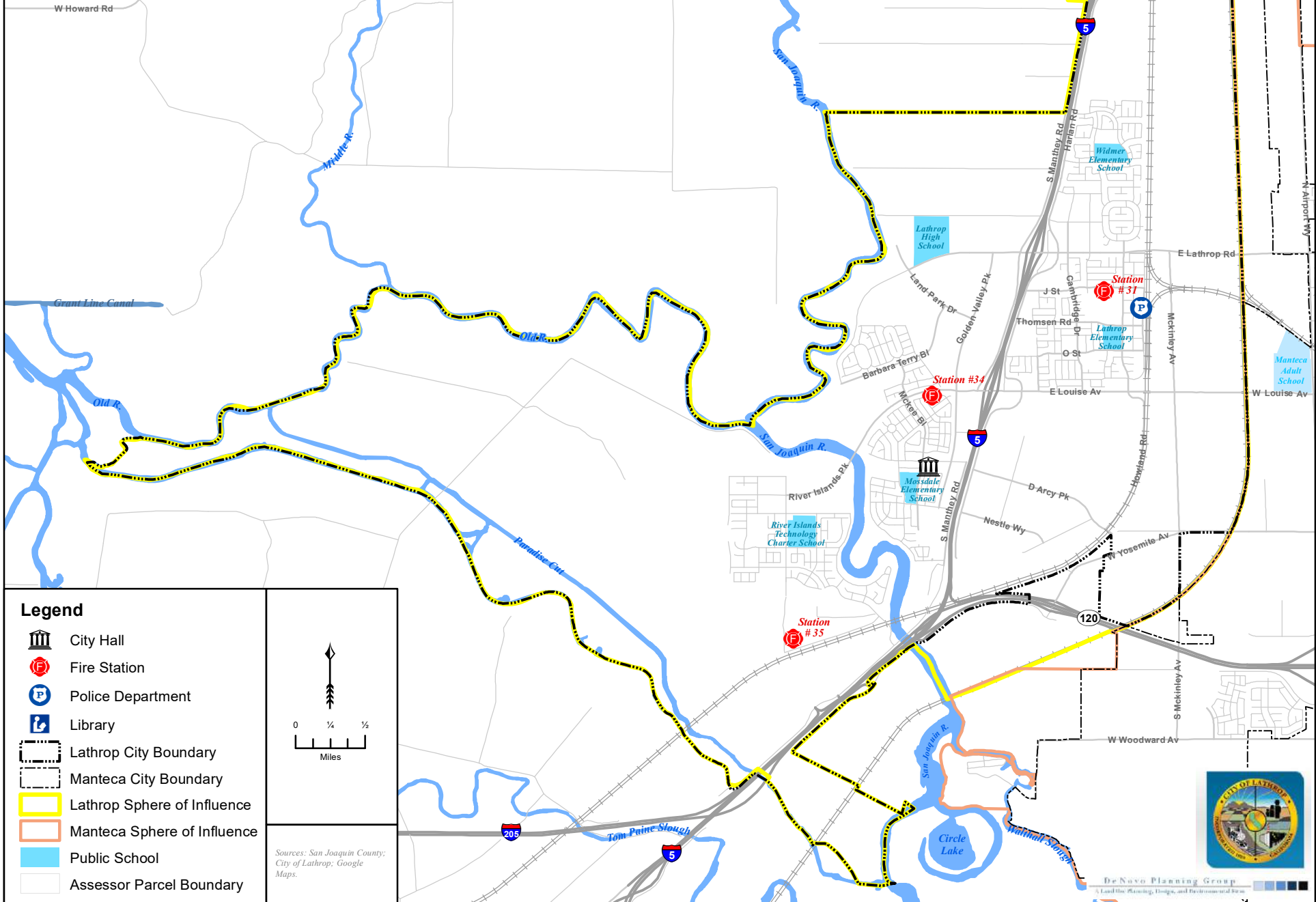
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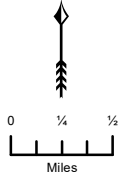


**CITY OF LATHROP GENERAL PLAN**  
**Figure 3.2-1 Public Facilities**



**Legend**

-  City Hall
-  Fire Station
-  Police Department
-  Library
-  Lathrop City Boundary
-  Manteca City Boundary
-  Lathrop Sphere of Influence
-  Manteca Sphere of Influence
-  Public School
-  Assessor Parcel Boundary



Sources: San Joaquin County;  
 City of Lathrop; Google  
 Maps.



De Novo Planning Group  
 Lead the Planning, Design, and Environmental Work

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### 3.3 PARKS AND RECREATION

This section addresses the provision of parks and recreation amenities in the City of Lathrop. Parks, trails, and recreational facilities in the City of Lathrop are managed and maintained by the Parks and Recreation Department. Data from the City of Lathrop Parks & Recreation Department website was the primary source of information for this section. Figure 3.3-1 identifies the City's parks and trails.

#### REGULATORY FRAMEWORK

##### *STATE*

#### **Quimby Act**

The Quimby Act (California Government Code Section 66477) states that “the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative or parcel map.” Requirements of the Quimby Act apply only to the acquisition of new parkland and do not apply to the physical development of new park facilities or associated operations and maintenance costs. The Quimby Act seeks to preserve open space needed to develop parkland and recreational facilities; however, the actual development of parks and other recreational facilities is subject to discretionary approval and is evaluated on a case-by-case basis with new residential development. The City has adopted park fees as allowed by the Quimby Act, as described in greater detail below.

##### *LOCAL*

#### **City of Lathrop Municipal Code**

The Lathrop Municipal Code contains ordinances regulating park fees within the City of Lathrop. Chapter 3.20 provides for the City's Impact Fee Ordinance, which requires development impact fees to be charged to fund improvements to the City's infrastructure. Chapter 12.20 allows the city council to authorize the adoption of fees for recreation programs and for the use of park facilities for non-city functions, and provides other provisions related to parks within the City of Lathrop.

#### TYPES OF PARKS

**Community parks:** Community parks are generally 15 to 25 acres in size, and include areas for active sports as well as space for family and group activities, such as picnicking. Community parks are larger in size than neighborhood parks and serve to fulfill the active and passive recreational needs of multiple neighborhoods. The community park serves the needs of local neighborhoods by providing a close to home site for more active recreation that is not typically suitable or physically possible in a neighborhood park (i.e. formal sports fields and courts with night lighting). Community parks and sports parks are where most organized activities provided by the Parks and Recreation Department and various league sports are intended to occur.

**Neighborhood parks:** Neighborhood parks serve as the focal point of neighborhood communities, the hub for both physical and social activities in a recreational setting that should be primarily passive. Appropriately designed neighborhood parks act as “pulse points” within the city. They are spaces that develop a sense of place while at the same time evolve to reflect the neighborhood they represent. Neighborhood parks act as critical building blocks of the city's image and assist in developing an overall sense of community and security. They also serve as critical nodes and access points in the city-wide green space network. Neighborhood parks are generally 5 to 7 acres. Amenities at neighborhood parks may include open multi-uses spaces, basketball, volleyball, bocce ball, and tennis courts, small picnic areas, playground equipment, restroom facilities, water play features, and barbeques.

### 3.0 COMMUNITY SERVICES AND UTILITIES

**Special use parks:** The Special Use Parks allow for flexibility in providing recreational resources throughout the city-wide park space network. This classification is intended to accommodate special circumstances, unique site characteristics, etc. in park, trail, and recreation resources. These types of resources add diversity to the park network and accommodate a variety of non-traditional recreation amenities beyond the standard neighborhood, and community, park classifications.

#### CITY PARKS

The City currently maintains fifteen distinct parks and four public facilities, managed by the City of Lathrop Parks & Recreation Department. The location of parks within the City is shown on Figure 3.3-1. Table 3.3-1 summarizes the City’s parks and facilities managed by the City of Lathrop Parks & Recreation Department.

**TABLE 3.3-1: SUMMARY OF PARKS & RECREATION DEPARTMENT PARKS AND FACILITIES**

<i>PARK/FACILITY NAME</i>	<i>ADDRESS</i>	<i>FACILITY TYPE</i>	<i>ACREAGE</i>
Apolinar Sangalang Park	13470 Slate Street	Park	9.74
Armstrong Park	230 Blue Sky Park	Park	0.38
Crescent Park	15980 Crescent Park Circle	Park	1.43
Dos Reis Regional Park	890 Dos Reis Road	Park	8.93
Lathrop City Hall Council Chambers	390 Towne Center Drive	Facility	0.76
Lathrop Community Center	15557 Fifth Street	Facility	0.33
Lathrop Generations Center and Park	450 Spartan Way	Park/Facility	6.0
Lathrop Senior Center	15707 Fifth Street	Facility	0.13
Lathrop Skate Park	7 <sup>th</sup> Street & K Street	Park	0.29
Libby-Mingo Park	575 Libby Lane	Park	1.19
Michael Vega Park	980 Lakeside Drive	Park	2.939
Milestone Park	630 Milestone Drive	Park	1.00
Mossdale Commons	740 Green Plaza	Park	1.45
Mossdale Crossing Park	19091 South Manthey Road	Park	4.05
Mossdale Landing Community Park	700 Town Centre Drive	Park	20.38
Park West	16130 Shelteed Cove Circle	Park	6.79
River Park North	16001 South Lathrop Road	Park	3.23
River Park South	17801 Inland Passage Way	Park	4.57
The Green	16700 English Country Trail	Park	1.02
Thomsen Park	435 Thomsen Road	Park	0.827
Valverde Park	15557 Fifth Street	Park	9.11
Woodfield Park	801 Lathrop Road	Park	5.53

*SOURCE: CITY OF LATHROP PARKS AND RECREATION, 2018; SAN JOAQUIN COUNTY/CITY OF LATHROP GIS DATA, 2018.*

Additional parks within the City of Lathrop will become available in the City of Lathrop as the River Islands at Lathrop master-planned community is built out. The River Islands at Lathrop is currently under construction in the southwestern portion of the city limits (as of March 2018, approximately one-quarter of the first phase of 4,284 homes has been built). Once fully developed, the master-planned community will include a large number of parks, playing fields, green spaces, and picnic areas, as well as neighborhood lakes for non-motorized boats, and 11 miles of lakefront access. Michael Vega Park, which is located within the River Islands at Lathrop master-planned community, is already developed, as shown in Figure 3.3-1 and Table 3.3-1 (above).

On a regional scale, the City is located in the Sacramento-San Joaquin Delta (Delta), which contains several recreational areas and facilities, primarily for water-based recreation. Regional County parks near the City

include the 8.93-acre Dos Reis Regional Park and the 4.05-acre Mossdale Crossing Regional Park, both located along the San Joaquin River. Mossdale Crossing Park is located on the west side of Interstate 5. Each of these parks includes boat launch ramps, picnic/barbeque areas, and children’s play areas. Dos Reis Regional Park also has camping facilities. Also in the vicinity is the Haven Acres Marina, a private marina located on the San Joaquin River north of Dos Reis Regional Park. This facility provides river access to the San Joaquin River and includes parking areas, a boat ramp, and 10 boat berths.

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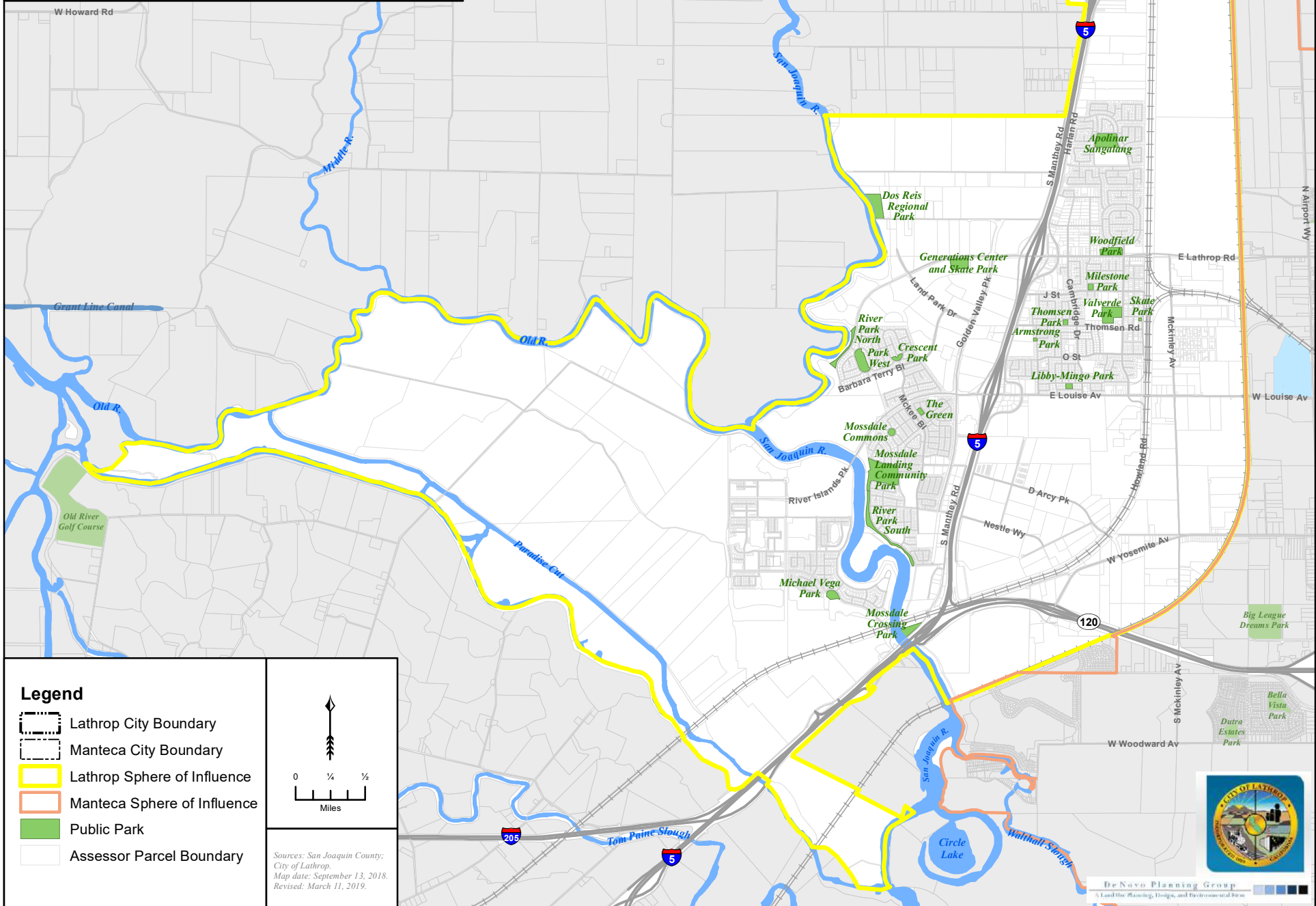
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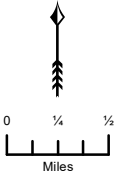
CITY OF LATHROP GENERAL PLAN UPDATE

Figure 3.3-1 Parks and Trails



Legend

- Lathrop City Boundary
- Manteca City Boundary
- Lathrop Sphere of Influence
- Manteca Sphere of Influence
- Public Park
- Assessor Parcel Boundary



Sources: San Joaquin County;  
City of Lathrop.  
Map date: September 13, 2018.  
Revised: March 11, 2019.



De Novo Planning Group  
Lead the Planning, Design, and Environmental Work

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### 3.4 SCHOOLS, LIBRARIES AND OTHER COMMUNITY FACILITIES

This section addresses the provision of schools, libraries, and other community facilities in the City of Lathrop. Data from the California Department of Education and the City of Lathrop were the primary sources of information for this section. Figure 3.2-1 provides the location of the City's public schools and library.

#### REGULATORY FRAMEWORK

##### *STATE*

#### **California Code of Regulations**

The California Code of Regulations, Title 5 Education Code, governs all aspects of education within the State.

#### **Leroy F. Greene School Facilities Act of 1998 (SB 50)**

The "Leroy F. Greene School Facilities Act of 1998," also known as Senate Bill No. 50 or SB 50 (Chapter 407, Statutes of 1998), governs a school district's authority to levy school impact fees. This comprehensive legislation, together with the \$9.2 billion education bond act approved by the voters in November 1998 known as "Proposition 1A," reformed methods of school construction financing in California. SB 50 instituted a new school facility program by which school districts can apply for State construction and modernization funds. It imposed limitations on the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provided the authority for school districts to levy fees at three different levels:

- Level I fees are the current statutory fees allowed under Education Code 17620. This code section provides the basic authority for school districts to levy a fee against residential and commercial construction for the purpose of funding school construction or reconstruction of facilities. These fees vary by district for residential construction and commercial construction and are increased biannually.
- Level II fees are outlined in Government Code Section 65995.5, allowing school districts to impose a higher fee on residential construction if certain conditions are met. These conditions include having a substantial percentage of students on multi-track year-round scheduling, having an assumed debt equal to 15–30% of the district's bonding capacity (percentage is based on revenue sources for repayment), having at least 20% of the district's teaching stations housed in relocatable classrooms, and having placed a local bond on the ballot in the past four years which received at least 50% plus one of the votes cast. A Facility Needs Assessment must demonstrate the need for new school facilities for unhoused pupils is attributable to projected enrollment growth from the construction of new residential units over the next five years.
- Level III fees are outlined in Government Code Section 65995.7. If State funding becomes unavailable, this code section authorizes a school district that has been approved to collect Level II fees to collect a higher fee on residential construction. This fee is equal to twice the amount of Level II fees. However, if a district eventually receives State funding, this excess fee may be reimbursed to the developers or subtracted from the amount of State funding.

#### **The Kindergarten-University Public Education Facilities Bond Act of 2002 (Prop 47)**

This act was approved by California voters in November 2002 and provides for a bond issue of \$13.05 billion to fund necessary education facilities to relieve overcrowding and to repair older schools. Funds

will be targeted at areas of greatest need and must be spent according to strict accountability measures. Funds will also be used to upgrade and build new classrooms in the California Community Colleges, the California State University, and the University of California in order to provide adequate higher education facilities to accommodate growing student enrollment.

### **California Department of Education**

The California Department of Education (CDE) School Facilities Planning Division (SFPD) prepared a School Site Selection and Approval Guide that provides criteria for locating appropriate school sites in the State of California. School site and size recommendations were changed by the CDE in 2000 to reflect various changes in educational conditions, such as lowering of class sizes and use of advanced technology. The expanded use of school buildings and grounds for community and agency joint use and concern for the safety of the students and staff members also influenced the modification of the CDE recommendations.

Specific recommendations for school size are provided in the School Site Analysis and Development Guide. This document suggests a ratio of 1:2 between buildings and land. CDE is aware that in a number of cases, primarily in urban settings, smaller sites cannot accommodate this ratio. In such cases, the SFPD may approve an amount of acreage less than the recommended gross site size and building-to-ground ratio.

Certain health and safety requirements for school site selection are governed by State regulations and the policies of the SFPD relating to:

- Proximity to airports, high-voltage power transmission lines, railroads, and major roadways;
- Presence of toxic and hazardous substances;
- Hazardous facilities and hazardous air emissions within one-quarter mile;
- Proximity to high-pressure natural gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- Noise;
- Results of geological studies or soil analyses; and
- Traffic and school bus safety issues.

### *LOCAL*

#### **City of Lathrop Municipal Code**

The City of Lathrop Municipal Code contains ordinances that relating to schools, libraries, and other public facilities. Chapter 3.20 provides for the City's Impact Fee Ordinance, which requires development impact fees to be charged to fund improvements to the City's infrastructure.

#### **City of Lathrop General Plan**

The existing Lathrop General Plan includes the following goals and policies related to schools:

**GOAL #5 – Enhancing the Quality of Life:** It is a goal of the General Plan to enhance the quality of living by preventing the degradation of the natural environment, and by taking steps to off-set and alleviate the effects of that degradation which already has occurred or which cannot be avoided. Where feasible, natural conditions should be emulated as features of the community's systems of public and private open space.

### **Recreation:**

***The following statements of policy are recommended for adoption by the City, and the Board of Trustees of the Manteca and Tracy Unified School Districts and the Banta School District:***

**RECREATION POLICY 1** – It is the policy of the City and the School Board, functioning under a joint powers or other appropriate written agreement, to provide such quantity and quality of recreation opportunity as will be necessary for individual enjoyment and to assure the physical, cultural and spiritual benefit of recreation for all people of the community.

**RECREATION POLICY 2** – The City and School Board supports the creation of a means to achieve a permanent and stable funding for local recreation services.

**RECREATION POLICY 3** – The recreation program will encompass the needs of all age groups, concentrating on activities and experiences which people are mostly unable to provide for themselves.

**RECREATION POLICY 4** – The range of recreation opportunities will be provided through the development of general and specialized areas and facilities at the neighborhood, village and community level throughout the urban area.

**RECREATION POLICY 5** – The fulfillment of recreation needs will be accomplished through a coordination of effort and programming on the part of the City, the School District, and charitable, service, religious, and civic organizations, which takes maximum advantage of fiscal and physical resources, and individual and group interest, leadership and talent within the community, both public and private.

**RECREATION POLICY 6** – Through an ongoing coordinated effort, a "framework for cooperation" should be developed and maintained by the City and School Board. This framework should clearly delineate the areas of responsibility to be retained by each jurisdiction. Examples of topics include fee structures, contracts for maintenance and operation and coordination and sponsorship of recreation programming.

**RECREATION POLICY 7** – The City will encourage and, where appropriate, require the provision of recreation areas and facilities within residential areas and the community as a whole to meet the general and specialized needs of existing and future residents. The Recreation component of the Resource Management Element of the General Plan is intended to meet the criteria and standards required by the State Subdivision Map Act and by the Quimby Act for determining financial responsibilities of developers in meeting recreation needs of the community.

## SCHOOLS

Most schools within the City of Lathrop are part of the Manteca Unified School District (MUSD). The MUSD provides school services for grades kindergarten through 12 (K-12) within the communities of Manteca, Lathrop, Stockton, and French Camp. The District is approximately 113 square miles and serves more than 23,000 students. Within the City of Lathrop, there are three elementary schools (Lathrop Elementary School, Joseph Widmer School, and Mossdale Elementary School) and one high school (Lathrop High School). River Islands has two charter elementary schools, located within the Banta Unified School District (River Islands Technology Academy and the S.T.E.A.M. Academy). Table 3.4-1 lists MUSD schools in

### 3.0 COMMUNITY SERVICES AND UTILITIES

Lathrop and the most recent enrollment for each school, as well as the capacity for each school (where data is available).

As shown in Table 3.4-1, the schools in the City had a total enrollment of approximately 5,247 students, of which 3,917 were enrolled in elementary and middle school (grades K – 8) and 1,330 were enrolled in high school (grades 9 – 12). Mossdale Elementary School has more students than the school’s current physical capacity. The MUSD has been able to manage the problem by overflowing students to other campuses with available capacity. The MUSD has declared that it will need to focus on addressing the capacity needs of Mossdale Elementary School capacity in coming years.

District-wide, MUSD Schools had a total enrollment of 23,757 students for the 2017-2018 school year. Table 3.4-2 provides a summary of the public school enrollment by grade within the entirety of the MUSD.

**TABLE 3.4-1: PUBLIC SCHOOLS SERVING LATHROP**

SCHOOL	GRADES SERVED	ADDRESS	ENROLLMENT 2017-2018 SCHOOL YEAR	SCHOOL CAPACITY
<i>ELEMENTARY AND MIDDLE SCHOOLS</i>				
Lathrop Elementary School	K-8	15851 5 <sup>th</sup> Street	875	924
Joseph Widmer Elementary School	K-8	751 Stonebridge Lane	831	986
Mossdale Elementary School	K-8	455 Brookhurst Boulevard	1,061	920
River Islands Technology Academy	K-8	1175 Marina Drive	672	--
Next Generation S.T.E.A.M. Academy	K-8	18001 Commercial Street	478	--
<b>Total</b>			<b>3,917</b>	
<i>HIGH SCHOOLS</i>				
Lathrop High School	9-12	647 Spartan Way	1,330	1,741
<b>Total</b>			<b>1,330</b>	

SOURCES: CALIFORNIA DEPARTMENT OF EDUCATION EDUCATIONAL DEMOGRAPHICS UNIT ENROLLMENT FOR 2017-18; MANTECA UNIFIED SCHOOL DISTRICT’S STUDENT POPULATION PROJECTIONS FALL 2016-2021 BY RESIDENCE AND MATURITY (APRIL 2017).

**TABLE 3.4-2: ENROLLMENT BY GRADE MUSD (2017-2018)**

MANTECA UNIFIED	GRADE LEVEL													TOTAL 2017-2018
	K	1	2	3	4	5	6	7	8	9	10	11	12	
<b>Total</b>	1,856	1,727	1,706	1,647	1,718	1,828	1,937	1,892	1,754	1,865	1,943	1,926	1,912	<b>23,757</b>

SOURCE: CALIFORNIA DEPARTMENT OF EDUCATION EDUCATIONAL DEMOGRAPHICS UNIT ENROLLMENT FOR 2017-18

### LATHROP LIBRARY SERVICES

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The Lathrop Branch Library, a branch of the Stockton-San Joaquin County Public Library system, is located at 459 Spartan Way. The Lathrop Branch Library offers computer workstations for Internet and word processing use, a ready reference collection, and a circulating collection of popular materials in English and Spanish. Items include books, magazines, audiobooks, large print books, DVDs, and music CDs. The Manteca Bulletin is available for reading in the branch. Customers are able to receive hold requests, check out and return items, and to return materials from other library locations at this branch. The Lathrop Branch Library is open Monday through Thursday, from 1:00 to 6:00 PM, and Friday and Saturday from noon to 5:00 PM.

### LATHROP SENIOR CENTER

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The Lathrop Senior Center, located at 15707 Fifth Street, provides lunches, classes, and various trips and activities. There are no membership fees to participate at the center, however, some classes and activities have nominal fees. The facility is open Monday through Friday, 9:00 AM through 4:00 PM. In addition, each month, the Senior Advisory Committee meets at the Lathrop Senior Center, which is appointed by the City Council to coordinate recreational, education, and social service opportunities for those aged fifty and above.

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### 4.0 HAZARDS, SAFETY, AND NOISE

Issues and topics related to health, safety, and noise within the Planning Area are addressed in this chapter. Some of these hazards may be naturally induced, such as wildfire hazards. Other health and safety hazards may be the result of natural hazards, which are exacerbated by human activity, such as development in areas prone to flooding. Additional hazards are entirely human-made, including airport crash hazards and exposure to hazardous materials.

This chapter is divided into the following sections:

- 4.1 Hazards and Hazardous Materials
- 4.2 Air Traffic
- 4.3 Fire Hazards
- 4.4 Flooding
- 4.5 Noise

### 4.1 HAZARDS AND HAZARDOUS MATERIALS

A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating irreversible illness; or (2) pose a substantial present or potential hazard to human health and safety or the environment when improperly treated, stored, transported, or disposed of. Hazardous materials are mainly present because of industries involving chemical byproducts from manufacturing, petrochemicals, and hazardous building materials.

Hazardous waste is the subset of hazardous materials that has been abandoned, discarded, or recycled and is not properly contained, including contaminated soil or groundwater with concentrations of chemicals, infectious agents, or toxic elements sufficiently high to increase human mortality or to destroy the ecological environment. If a hazardous material is spilled and cannot be effectively picked up and used as a product, it is considered to be hazardous waste. If a hazardous material site is unused, and it is obvious there is no realistic intent to use the material, it is also considered to be a hazardous waste. Examples of hazardous materials include flammable and combustible materials, corrosives, explosives, oxidizers, poisons, materials that react violently with water, radioactive materials, and chemicals.

## REGULATORY FRAMEWORK

### *FEDERAL*

#### **Comprehensive Environmental Response, Compensation & Liability Act (CERCLA)**

This act, commonly associated with the term “Superfund,” established:

- Regulations concerning closed and abandoned hazardous waste sites
- Liability of parties responsible for any releases of hazardous waste at these sites
- Funding for cleanup when responsible parties cannot be identified

### **Resource Conservation and Recovery Act (RCRA)**

This act established EPA's "cradle to grave" control (generation, transportation, treatment, storage, and disposal) over hazardous materials and wastes. In California, the Department of Toxic Substances Control (DTSC) has RCRA authorization.

### **Clean Air Act**

In according with the Clean Air Act, the EPA has established National Emissions Standards for Hazardous Air Pollutants. Exceeding the emissions standard for a given air pollutant may cause an increase in illnesses and/or fatalities.

### **Clean Water Act (CWA)**

The CWA, which amended the WPCA of 1972, sets forth the Section 404 program to regulate the discharge of dredged and fill material into Waters of the U.S. and the Section 402 National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants into Waters of the U.S. The Section 401 Water Quality Certification program establishes a framework of water quality protection for activities requiring a variety of Federal permits and approvals (including CWA Section 404, CWA Section 402, FERC Hydropower and Section 10 Rivers and Harbors).

### *STATE*

### **California Health & Safety Code**

Division 20 of the Health and Safety Code establishes Department of Toxic Substances Control (DTSC) authority and sets forth hazardous waste and underground storage tank regulations. In addition, the division creates a State superfund framework that mirrors the Federal program.

Division 26 of the Health and Safety Code establishes California Air Resources Board (CARB) authority. The division designates CARB as the air pollution control agency per Federal regulations and charges the Board with meeting Clean Air Act requirements.

### **Food and Agriculture Code**

Division 6 of the California Food and Agricultural Code (FAC) establishes pesticide application regulations. The division establishes training standards for pilots conducting aerial applications as well as permitting and certification requirements.

### **Water Code**

Division 7 of the California Water Code, commonly referred to as the Porter-Cologne Water Quality Control Act, created the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). In addition, water quality responsibilities are established for the SWRCB and RWQCBs.

### **California Code of Regulations**

Title 3 of the CCR pertains to the application of pesticides and related chemicals. Parties applying regulated substances must continuously evaluate application equipment, the weather, the treated lands and all surrounding properties. Title 3 prohibits any application that would:

- Contaminate persons not involved in the application
- Damage non-target crops or animals or any other public or private property
- Contaminate public or private property or create health hazards on said property



Title 8 of the CCR establishes California Occupational Safety and Health Administration (Cal OSHA) requirements related to public and worker protection. Topics addressed in Title 8 include materials exposure limits, equipment requirements, protective clothing, hazardous materials, and accident prevention. Construction safety and exposure standards for lead and asbestos are set forth in Title 8.

Title 14 of the CCR establishes minimum standards for solid waste handling and disposal.

Title 17 of the CCR establishes regulations relating to the use and disturbance of materials containing naturally occurring asbestos.

Title 22 of the CCR sets forth definitions of hazardous waste and special waste. The section also identifies hazardous waste criteria and establishes regulations pertaining to the storage, transport, and disposal of hazardous waste.

Title 26 of the CCR is a medley of State regulations pertaining to hazardous materials and waste that are presented in other regulatory sections. Title 26 mandates specific management criteria related to hazardous materials identification, packaging, and disposal. In addition, Title 26 establishes requirements for hazardous materials transport, containment, treatment, and disposal. Finally, staff training standards are set forth in Title 26.

Title 27 of the CCR sets forth a variety of regulations relating to the construction, operation and maintenance of the State's landfills. The title establishes a landfill classification system and categories of waste. Each class of landfill is constructed to contain specific types of waste (household, inert, special, and hazardous).

### *LOCAL*

#### **City of Lathrop General Plan**

The current City of Lathrop General Plan identifies the following goals and policies related to hazardous materials and waste:

##### **Hazard Management Element**

**GOAL 1: The reduction of loss of life or property due to crime, fire, earthquake, flooding or other disasters or hazards.**

**GOAL 2: The provision of adequate medical and emergency services to reduce the effects of natural or manmade disasters.**

**GOAL 3: The promotion of citizen awareness and preparedness for emergency/disaster situations or potential for the incidence of crime.**

**GOAL 4: The implementation of adequate inter-agency disaster planning, including evacuation of all or parts of the community to safe areas of the County.**

### ENVIRONMENTAL SETTING

#### **Envirostor Data Management System**

The DTSC maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. This site cleanup information includes: Federal Superfund Sites (NPL), State Response Sites, Voluntary Cleanup Sites, School Cleanup Sites, Corrective Action Sites, Tiered Permit Sites, and Evaluation /

## 4.0 HAZARDS, SAFETY, AND NOISE

Investigation Sites. The hazardous waste facilities include: Permitted–Operating, Post-Closure Permitted, and Historical Non-Operating.

There are 18 locations with a Lathrop address that are listed in the Envirostor database. Seven sites are listed as school investigation sites with no action required, three sites are listed as certified (two State Response and one corrective action), two sites are listed as active (one is listed as a corrective action and one is listed as a Federal Superfund), two sites are referred to the RWQCB (one evaluation and one State Response), one site is referred to the Site Mitigation and Brownfields Reuse Program (SMBRP) (corrective action), and one site is listed as a military evaluation with no further action. Table 4.1-1 lists the Envirostor sites within Lathrop. Following the table is a background discussion of these sites.

**TABLE 4.1-1: LATHROP SITE CLEANUP AND HAZARDOUS FACILITIES LIST (ENVIROSTOR)**

NAME	STATUS DATE	LOCATION
<i>ACTIVE – FEDERAL SUPERFUND</i>		
Sharpe Army Depot	5/1/1986	61 mi. East of San Francisco
<i>ACTIVE – CORRECTIVE ACTION</i>		
J R Simplot Co.	6/14/2011	16777 Howland Ave.
<i>NO FURTHER ACTION – MILITARY INVESTIGATION</i>		
Lathrop Quinones Armed Forces Reserve Center	12/19/2001	400 E. Roth Rd.
<i>NO FURTHER ACTION – SCHOOL INVESTIGATION</i>		
East Union HS District Farm Project	12/10/2010	2901 E. Louise Ave.
Joe Widmer Elementary School	6/23/2000	Stonebridge Lane/I-5
Lathrop High School	1/30/2006	526 and 600 W. Dos Reis Rd. & 15225 Matheny Rd.
Louise Avenue Community School	10/19/2001	245 Louise Ave.
Mossdale School Site	7/3/2003	500 W. Louise Ave./17599 S. Matheny Rd.
Proposed River Islands MS/ES	1/22/2007	San Joaquin Rd. and north of Stewart Rd.
Terry School	6/10/2003	401/801 W. Louise Ave.
<i>CERTIFIED – CORRECTIVE ACTION</i>		
Defense Dist Depot/San Joaquin/Sharpe	2/25//2009	Roth Rd. Buildings S-4
<i>CERTIFIED – STATE RESPONSE</i>		
J. R. Simplot, Lathrop – Soil Removal	6/1/1983	16777 Howland Ave.
Lague Sales	3/1/1990	2112 E. Louise Ave.
<i>UNDERGOING CLOSURE – NON-OPERATING</i>		
Defense Dist Depot/San Joaquin/Sharpe	N/A	Roth Rd. Buildings S-4
J R Simplot Co.	N/A	16777 Howland Ave.
<i>REFER – OTHER AGENCY</i>		
Occidental Chemical Corp	6/19/2013	16777 Howland Rd.
Oxychem-Lathrop	1/1/1984	2715 E. Louise Ave.
Libbey-Owens-Ford Glass Co.	11/15/1982	500 E. Louise Ave.

SOURCE: CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL, ENVIROSTOR DATABASE, 2017.

### *ACTIVE SITES*

There are two active sites with a Lathrop address that are listed in the Envirostor database: The J R Simplot Co Corrective Action site, and the Sharpe Army Depot Federal Superfund site.

The J R Simplot Co. Corrective Action site has an active cleanup status as of June 14, 2011. This approximately one-acre site is located at 16777 Howland Avenue. The site has been used for many years for formulating and storing agricultural fertilizers. Previous operations also included pesticide formulation in the Ag Chem area near the west side of the site. The soil at this site may be contaminated with 1,2-Dibromo-3-Chloropropane (DBCP).

In 1981, the California Department of Health Services (DHS, the predecessor agency to the DTSC) issued OxyChem the Interim Status Document (ISD) to regulate the storage of hazardous wastes at the plant. OxyChem continued operation of the plant through 1982, including storage of wastewater in aboveground storage tank (AST) 128 and storage of stormwater in AST 127. In 1982, OxyChem initiated a groundwater remediation program that continues to this date. Groundwater containing DBCP and ethylene dibromide (EDB) is extracted from shallow wells, treated, and re-injected into deeper wells under the direction of the California RWQCB. This groundwater remediation program is not a part of the Ag Chem Area closure plan. In 1983, Simplot purchased the Lathrop Plant from OxyChem and requested that the DHS rescind the ISD because wastewater storage would be limited to less than 90 days in duration. The ISD was rescinded by DHS in 1983. AST 127 and AST 128 continued to be used for short-term storage of wastewater. In 1988, after pesticide formulation ceased, Simplot discontinued wastewater storage and cleaned AST 127, AST 128, and associated piping. Stormwater was stored in AST 127 from 1988 until 1991, when it was converted for use in storing fertilizer. AST 128 remained in place and unused since 1988.

In 1993, the DTSC issued Simplot a Report of Violation (ROV) indicating that the former hazardous waste storage tanks had not been closed in accordance with current requirements. Simplot responded to the ROV by transmitting documentation concerning the 1988 tank/piping cleanout to the DTSC. Subsequently, Simplot and DTSC entered into a Consent Agreement to complete closure of the Ag Chem Area. In 1995, and on behalf of Simplot, Geomatrix prepared the closure plan, which was approved by the DTSC in 1996.

The DTSC met with facility representatives and the Human and Ecological Risk Division (HERD) to discuss the future work. Based on this meeting, J R Simplot submitted a Closure/Risk Assessment which has been reviewed by DTSC. A letter will be mailed to the facility with comments regarding the Health Risk Assessment (HRA) portion. Occidental Chemical Corp. has signed a Voluntary Cleanup Agreement (VRA) with DTSC to provide for the completion of a Removal Action Workplan to remove contaminants from the site area.

The Sharpe Army Depot Federal Superfund site has an active cleanup status as of May 1, 1986. This site is discussed in further detail below.

### **Cortese List**

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. California Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. There are not sites within Lathrop that are listed on the Cortese List.

## 4.0 HAZARDS, SAFETY, AND NOISE

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There is one site within Lathrop that is listed on the Envirostor database as a Federal Superfund Cleanup Site. This site, the Sharpe Army Depot (site 39970002), was previously known as Sharpe Army Depot and was operated by the U.S. Army. The site was established in 1941 and consists of 727 acres. As of July 1990, the Defense Logistics Agency (DLA) took over operation of the Sharpe Army Depot site and is now known as the DDJC-Sharpe. The repair and reconditioning of heavy equipment and aircraft was conducted onsite until 1976. Storage, handling, preservation, and shipment of general supplies and equipment is the remaining base mission.

The Sharpe facility is divided into three general contamination areas: North Balloon, South Balloon, and Central areas. Groundwater treatment removal actions were initiated in the North and South Balloon areas in November 1990, and April 1987, respectively. The Sharpe facility was listed on the federal National Priorities List in July 1987. On July 19, 1989, the U.S. Army, U.S.EPA, the RWQCB, and DTSC entered into a Federal Facility Agreement (FFA) for Sharpe.

Past disposal sites include burial areas, burn pits, fire training areas, and leaking underground storage tanks. Soil and groundwater contamination by volatile organic compounds (VOCs), primarily trichloroethylene (TCE) and perchloroethylene (PCE), has been found at the site. Presently, two offsite TCE plumes can be found west of the Central Area as well as in the North Balloon. Elevated arsenic concentrations have also been detected in the soils and groundwater at Sharpe. Lead and chromium contamination have also been found in the soil.

DDJC-Sharpe has completed all but one of its planned soil removal actions. Specifically, Site S-26 is scheduled to be excavated in Spring 2006 to remove lead and chromium from soil in the North Balloon. Additionally, DDJC-Sharpe has clean closed all the Soil Vapor Extraction sites. DDJC--Sharpe completed its Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Five-Year Review in September of 2003. DDJC-Sharpe is currently evaluating its selected remedy and will develop an alternative remedy once an evaluation of innovative technologies is completed.

### **GeoTracker**

GeoTracker is the California Water Resource Control Board's data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense, Site Cleanup Program) as well as permitted facilities such as operating USTs and land disposal sites.

#### *LEAKING UNDERGROUND STORAGE TANKS (LUST)*

There are 14 locations with a Lathrop address that are listed in the GeoTracker database for Leaking Underground Storage Tanks (LUST). All of the locations have undergone LUST cleanup and the State has closed the cases. Table 4.1-2 lists the location of open and closed cases for LUSTs in Lathrop.

**TABLE 4.1-2: LATHROP LUST CLEANUP SITES**

NAME	ACTIVITY	LOCATION
<i>CLOSED CASES (CLEANUP COMPLETED)</i>		
ARCO #6080 Case #1	Completed - Case Closed	85 Louise Ave. E.
ARCO #6080 Case #2	Completed - Case Closed	85 Louise Ave. E.
Central Valley Construction	Completed - Case Closed	146 Klo Rd.
Circle-K #1205	Completed - Case Closed	16470 Cambridge Rd.
City of Lathrop	Completed - Case Closed	15688 Harlan Rd.
DiSalvo Trucking	Completed - Case Closed	1444 Lathrop Rd.
Fuller Mobile Home Park	Completed - Case Closed	365 Louise Ave. E.
Joe's Texaco	Completed - Case Closed	15600 Harlan Rd. S.
Langston's Market ARCO	Completed - Case Closed	15615 7 <sup>th</sup> St. S
Libbey Owens Ford Company	Completed - Case Closed	500 Louise Ave. E.
MBP Mossdale	Completed - Case Closed	444 Mossdale St.
Phillips 66	Completed - Case Closed	16500 Harlan Rd. S.
Quaresma Property	Completed - Case Closed	91 Thomsen Rd. E.
Segura & Sons Transportation	Completed - Case Closed	12796 Harlan Rd. S.

SOURCE: CALIFORNIA WATER RESOURCES CONTROL BOARD GEOTRACKER DATABASE, 2017.

#### *PERMITTED UNDERGROUND STORAGE TANK (UST)*

There are 12 locations with a Lathrop address that have Underground Storage Tanks (UST) that are permitted through the California Water Resources Control Board. Table 4.1-3 lists the location of the permitted USTs in Lathrop.

**TABLE 4.1-3: LATHROP PERMITTED UST SITES**

NAME	LOCATION
A & W Farms	12965 Manthey Rd. S.
ARCO 06080	85 Louise Ave. E.
Brown Sand Inc.	800 Mossdale Ave. W.
Colonial Energy CE 40135 (DBA Power Mart)	192 Lathrop Rd.
Fast Lane Central Valley	116 Roth Rd.
Joes Travel Plaza	15600 Harlan Rd. S.
Lathrop Gas & Food Inc.	140 Lathrop Rd. E.
Lathrop Shell	16500 Harlan Rd. S.
Mossdale Chevron	444 Mossdale Ave. W.
Pilot Travel Center Lathrop – 1017	345 Roth Rd.
Super Store Industries – Grocery Division	16888 McKinley Ave.
Two Guys Food & Fuel	147 Lathrop Rd. E.

SOURCE: CALIFORNIA WATER RESOURCES CONTROL BOARD GEOTRACKER DATABASE, 2017.

#### *WATER BOARD PROGRAM CLEANUP SITES*

There are 12 locations with a Lathrop address that are listed in the GeoTracker database for Water Board Cleanup Sites. Five of the locations have undergone cleanup and the State has closed the case. There are seven locations in Lathrop with an open case. Table 4.1-4 lists the location of open and closed cases for Water Board Program Cleanup Sites in Lathrop.

## 4.0 HAZARDS, SAFETY, AND NOISE

**TABLE 4.1-4: LATHROP WATER BOARD CLEANUP SITES**

NAME	LOCATION
<i>OPEN - REMEDIATION</i>	
Former Pilkington North America	500 Louise Ave. E.
Former Pilkington North America	500 Louise Ave. E.
Occidental Chemical Agricultural Products Company	16777 Howland Rd.
<i>OPEN – SITE ASSESSMENT</i>	
J. R. Simplot Company	16777 Howland Rd.
<i>OPEN – VERIFICATION MONITORING</i>	
J. R. Simplot Company	16777 Howland Rd.
<i>OPEN - INACTIVE CASE</i>	
Channel Construction Along Shulte Road	Shulte Rd.
<i>OPEN - ACTIVE CASE</i>	
San Joaquin Cogen LLC	17200 Murphy Pkwy.
<i>CLOSED CASES (CLEANUP COMPLETED)</i>	
California Natural Products	1250 Lathrop Rd. E.
D’Arcy Parkway Road Extension	400-500 D’Arcy Pkwy.
Hayre’s Egg Producers	12565 S. Manthey Rd.
Lague Sales Salvage Yard	2112 Louise Ave. E.
PG&E Lathrop Gas Dehydrator	Undine Rd.

SOURCE: CALIFORNIA WATER RESOURCES CONTROL BOARD GEOTRACKER DATABASE, 2017.

### Solid Waste Information System (SWIS)

#### FACILITY/SITE LISTING

The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the California Integrated Waste Management Board (CIWMB). The SWIS data identifies active, planned and closed sites. The City of Lathrop has two solid waste facilities listed in the database, both of which are closed. The site details are listed in Table 4.1-5 below.

**TABLE 4.1-5: CIWMB FACILITIES/SITES**

NUMBER	NAME	ACTIVITY	REGULATORY	STATUS
39-AA-0012	Windeler Ranch Glass Disposal Site	Solid Waste Disposal Site	Permitted	Closed
39-CR-0022	Pilkington North America, Inc.	Solid Waste Disposal Site	Unpermitted	Closed

SOURCE: CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY, 2017.

The Windeler Ranch Glass Disposal Site is located at 640 Mossdale Road. The facility is owned by Raab, G. and is inspected four times each year. The most recent inspection of this facility (as of December 2017) by the Local Enforcement Agency (San Joaquin County Environmental Health Department) shows no violations or areas of concern.

The Pilkington North America, Inc. Site is located at 500 E Louise Avenue. The facility is owned by Libbey-Owens Ford and is inspected four times each year. The most recent inspections of this facility (as of December 2017) by the Local Enforcement Agency (San Joaquin County Environmental Health Department) shows no violations or areas of concern.

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### 4.2 AIR TRAFFIC

The State Division of Aeronautics has compiled extensive data regarding aircraft accidents around airports in California. According to the California Airport Land Use Planning Handbook (2002), prepared by the State Division of Aeronautics, 18.2% of general aviation accidents occur during takeoff and initial climb and 44.2% of general aviation accidents occur during approach and landing. The State Division of Aeronautics has plotted accidents during these phases at airports across the country and has determined certain theoretical areas of high accident probability.

#### Approach and Landing Accidents

As nearly half of all general aviation accidents occur in the approach and landing phases of flight, considerable work has been done to determine the approximate probability of such accidents. Nearly 77% of accidents during this phase of flight occur during touchdown onto the runway or during the roll-out. These accidents typically consist of hard or long landings, ground loops (where the aircraft spins out on the ground), departures from the runway surface, etc. These types of accidents are rarely fatal and often do not involve other aircraft or structures. Commonly these accidents occur due to loss of control on the part of the pilot and, to some extent, weather conditions. (California Division of Aeronautics, 2002).

The remaining 23% of accidents during the approach and landing phase of flight occur as the aircraft is maneuvered towards the runway for landing, in a portion of the airspace around the airport commonly called the traffic pattern. Common causes of approach accidents include the pilot's misjudging of the rate of descent, poor visibility, unexpected downdrafts, or tall objects beneath the final approach course. Improper use of rudder on an aircraft during the last turn toward the runway can sometimes result in a stall (a cross-control stall) and resultant spin, causing the aircraft to strike the ground directly below the aircraft. The types of events that lead to approach accidents tend to place the accident site fairly close to the extended runway centerline. The probability of accidents increases as the flight path nears the approach end of the runway. (California Division of Aeronautics, 2002).

According to aircraft accident plotting provided by the State Division of Aeronautics, most accidents that occur during the approach and landing phase of flight occur on the airport surface itself. The remainder of accidents that occur during this phase of flight are generally clustered along the extended centerline of the runway, where the aircraft is flying closest to the ground and with the lowest airspeed. (California Division of Aeronautics, 2002).

#### Takeoff and Departure Accidents

According to data collected by the State Division of Aeronautics, nearly 65% of all accidents during the takeoff and departure phase of flight occur during the initial climb phase, immediately after takeoff. This data is correlated by two physical constraints of general aviation aircraft:

- The takeoff and initial climb phase are times when the aircraft engine(s) is under maximum stress and is thus more susceptible to mechanical problems than at other phases of flight; and
- Average general aviation runways are not typically long enough to allow an aircraft that experiences a loss of power shortly after takeoff to land again and stop before the end of the runway.

While the majority of approach and landing accidents occur on or near to the centerline of the runway, accidents that occur during initial climb are more dispersed in their location as pilots are not attempting to get to any one specific point (such as a runway). Additionally, aircraft vary widely in payload, engine power, glide ratio, and several other factors that affect glide distance, handling characteristics after engine



loss, and general response to engine failure. This further disperses the accident pattern. However, while the pattern is more dispersed than that seen for approach and landing accidents, the departure pattern is still generally localized in the direction of departure and within proximity of the centerline. This is partially due to the fact that pilots are trained to fly straight ahead and avoid turns when experiencing a loss of power or engine failure. Turning flight causes the aircraft to sink faster and flying straight allows for more time to attempt to fix the problem. (California Division of Aeronautics, 2002).

## REGULATORY FRAMEWORK

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### *FEDERAL*

#### **Aviation Act of 1958**

The Federal Aviation Act resulted in the creation of the Federal Aviation Administration (FAA). The FAA was charged with the creation and maintenance of a National Airspace System.

#### **Federal Aviation Regulations (CFR, Title 14)**

The Federal Aviation Regulations (FAR) establish regulations related to aircraft, aeronautics, and inspections and permitting.

### *STATE*

#### **Aeronautics Act (Public Utilities Code §21001)**

The Caltrans Division of Aeronautics bases the majority of its aviation policies on the Aeronautics Act. Policies include permits and annual inspections for public airports and hospital heliports and recommendations for schools proposed within two miles of airport runways.

#### **Airport Land Use Commission Law (Public Utilities Code §21670 et seq.)**

The law, passed in 1967, authorized the creation of Airport Land Use Commissions (ALUC) in California. Per the Public Utilities Code, the purpose of an ALUC is to protect *public health, safety, and welfare by encouraging orderly expansion of airports and the adoption of land use measures that minimizes exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses* (§21670). Furthermore, each ALUC must prepare an Airport Land Use Compatibility Plan (ALUCP). Each ALUCP, which must be based on a twenty-year planning horizon, should focus on broadly defined noise and safety impacts.

## ENVIRONMENTAL SETTING

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### **Local Airport Facilities**

There are no private or public airport facilities in the Planning Area.

**Stockton Metropolitan Airport:** The Stockton Metropolitan Airport is located approximately 2.8 miles north of the Lathrop City limits. This airport is a County-owned facility that occupies approximately 1,609 acres at an elevation of 23 feet above Mean Sea Level (MSL). The acreage within Airport Influence Area is 56,184 acres.

The Stockton Metropolitan Airport is designated as a Non-hub Commercial Service Airport within the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS). The airport is served by Allegiant Air, which provides service to Phoenix/Mesa, Arizona and Las Vegas, Nevada. In addition to commercial service, Stockton Metropolitan Airport offers a wide range of fixed base operators (FBOs) providing fuel, aircraft maintenance, aircraft hangar and tie-down rental, aircraft rental, flight

training, aircraft management services, and pilot lounges for corporate and general aviation pilots. The airport also houses FBOs that support air cargo operations.

Stockton Metropolitan Airport is served by a parallel runway system in a northwest-southeast orientation. Runway 11L-29R is 10,650 feet long and 150 feet wide and is constructed of asphalt. Runway 11R-29L is 4,448 feet long and 75 feet wide and also constructed of asphalt. Runway 11L-29R is accommodated by several instrument approach procedures aiding pilots in navigation to the runway. Runway 29R contains a medium intensity approach lighting system with runway alignment lights (MALSR) to provide runway alignment guidance for pilots in reduced visibility conditions. Runway 11L-29R is served by a four-light Precision Approach Path Indicator (PAPI-4) at both ends and contains high intensity runway lighting (HIRL) to indicate the location of the runway edge. Runway 11R-29L does not contain approach or runway edge lighting.

Figure 4.2-1 shows the Airport Influence Area for the Stockton Metropolitan Airport in relation to the Lathrop Planning Area. The northernmost portion of the Lathrop Planning Area is located within the airport influence area for the Stockton Metropolitan Airport identified in the ALUCP. Much of this land within the airport influence area is zoned for industrial uses by the City's General Plan. Other land uses within the airport influence area include commercial, public, open, low density residential, and medium density residential.

The lands within the City limits that are located in the airport influence area for the Stockton Metropolitan Airport are not within the Airport's noise exposure contours. Additionally, the lands within the City that are located in the airport influence area are not within the Airport's Safety Zones.

**Sharpe Army Airfield (AAF):** The Sharpe AAF is no longer operable. This facility was located within the Lathrop Planning Area off of W. Lathrop Road. This airport was associated with the former Sharpe Army Depot site. The Sharpe AAF was constructed some time between 1957 and 1960. The site was used as a transient aircraft carrying material and personnel in and out of the Depot. The Sharpe AAF closed some time between 1987 and 1998.

### Major Regional Airport Facilities

**San Francisco International Airport (SFO):** SFO is the largest airport in the region, and a hub for United Airlines. It provides a wide range of domestic airline service and all of the region's long-haul international flights. San Francisco serves 68% of regional Bay Area air passengers and 43% of regional air cargo shipments.

**Metropolitan Oakland International Airport (OAK):** Oakland Airport has traditionally been the hub for low cost carriers and a major air cargo center due to operations by FedEx and UPS. Oakland serves 17% of Bay Area regional air passengers and 52% of air cargo.

**Norman Y. Mineta San Jose International Airport (SJC):** Traffic at San Jose Airport has been affected by the recent realignment of airline services in the Bay Area. The airport does not currently offer any long-haul international flights, and air cargo facilities are limited due to space constraints. San Jose serves 15% of the Bay Area regional air passengers and 6% of air cargo.

**Sacramento International Airport (SMF):** The Sacramento Airport served nearly 9 million passengers in 2012 with 150 daily departures to 36 destinations. Southwest provides the majority of flights. Many Sacramento area air passengers use Oakland and San Francisco for their air service needs. Conversely, some Bay Area passengers choose Sacramento Airport.

### **National Transportation Safety Board Aviation Accident Database**

The National Transportation Safety Board Aviation Accident Database does not identify any aircraft accidents with Lathrop identified as the nearest location between January of 1983 to 2017. (National Transportation Safety Board, 2017).

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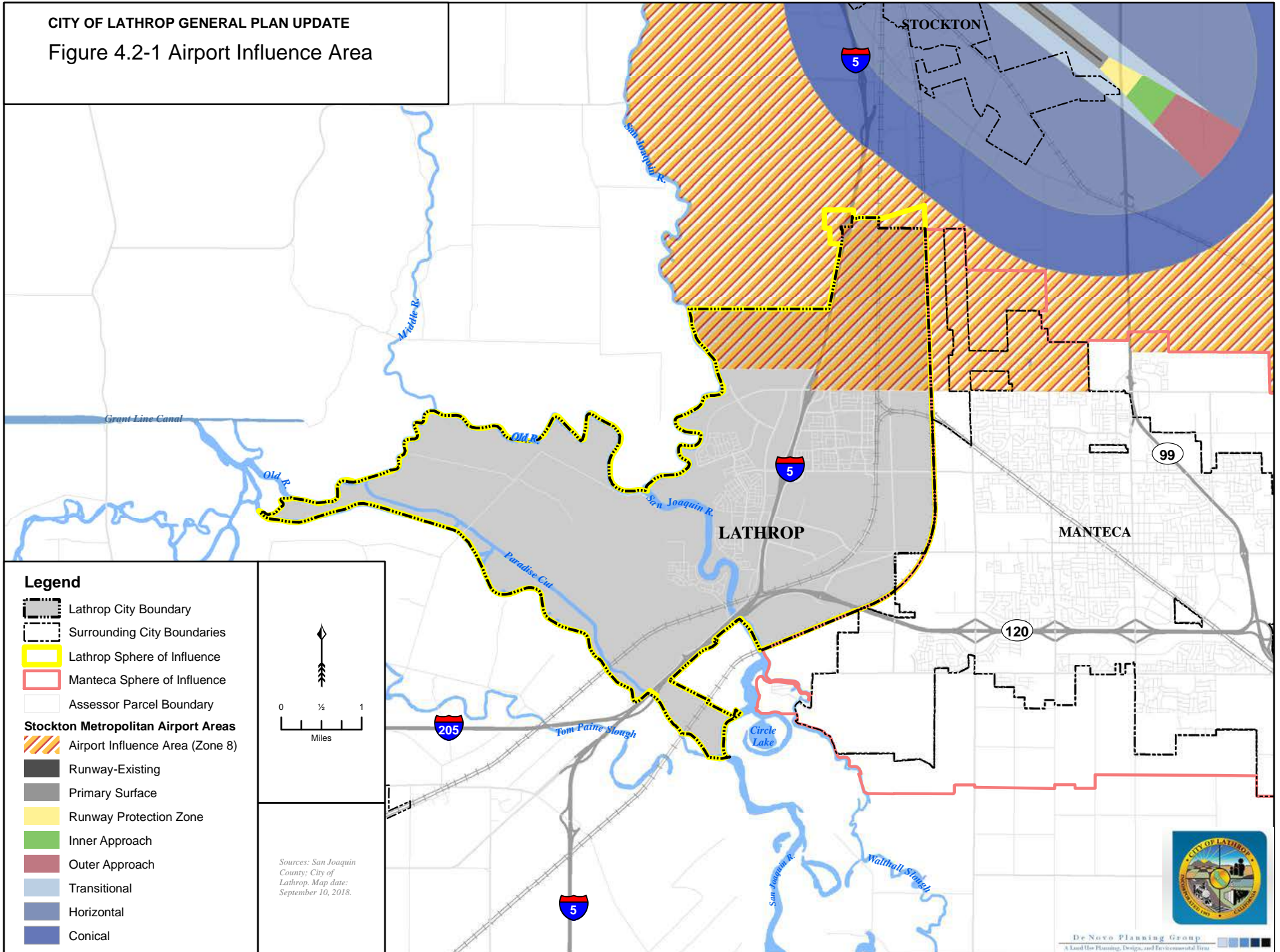
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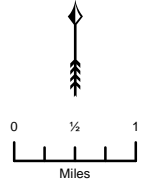
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**CITY OF LATHROP GENERAL PLAN UPDATE**  
**Figure 4.2-1 Airport Influence Area**



**Legend**

- Lathrop City Boundary
- Surrounding City Boundaries
- Lathrop Sphere of Influence
- Manteca Sphere of Influence
- Assessor Parcel Boundary
- Stockton Metropolitan Airport Areas**
- Airport Influence Area (Zone 8)
- Runway-Existing
- Primary Surface
- Runway Protection Zone
- Inner Approach
- Outer Approach
- Transitional
- Horizontal
- Conical



Sources: San Joaquin County; City of Lathrop; Map date: September 10, 2018.



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### 4.3 FIRE HAZARDS

This section addresses the hazards associated with wildfires in the Planning Area. The discussion of fire suppression resources is located in the Community Services and Facilities section of this report.

#### REGULATORY SETTING

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##### *FEDERAL*

##### **FY 2001 Appropriations Act**

Title IV of the Appropriations Act required the identification of “Urban Wildland Interface Communities in the Vicinity of Federal Lands that are at High Risk from Wildfire” by the U.S. Departments of the Interior and Agriculture.

##### *STATE*

##### **California Government Code Section 65302**

This section, which establishes standards for developing and updating General Plans, includes fire hazard assessment and Safety Element content requirements.

##### **Assembly Bill 337**

Per AB 337, local fire prevention authorities and the California Department of Forestry and Fire Protection (CalFire) are required to identify “Very High Fire Hazard Severity Zones (VHFHSZ) in Local Responsibility Areas (LRA). Standards related to brush clearance and the use of fire resistant materials in fire hazard severity zones are also established.

##### **California Public Resources Code**

The State’s Fire Safe Regulations are set forth in Public Resources Code §4290, which include the establishment of State Responsibility Areas (SRA).

Public Resources Code §4291 sets forth defensible space requirements, which are applicable to anyone that *...owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material* (§4291(a)).

##### **Uniform Fire Code**

The Uniform Fire Code (UFC) establishes standards related to the design, construction, and maintenance of buildings. The standards set forth in the UFC range from designing for access by firefighters and equipment and minimum requirements for automatic sprinklers and fire hydrants to the appropriate storage and use of combustible materials.

##### **CA Code of Regulations Title 8**

In accordance with CCR, Title 8, §1270 and §6773 (*Fire Prevention and Fire Protection and Fire Equipment*), the Occupational Safety and Health Administration (Cal OSHA) establishes fire suppression service standards. The standards range from fire hose size requirements to the design of emergency access roads.

##### **CA Code of Regulations Title 14 (Natural Resources)**

Division 1.5 (Department of Forestry and Fire Protection), Title 14 of the CCR establishes a variety of wildfire preparedness, prevention, and response regulations.

### **CA Code of Regulations Title 19 (Public Safety)**

Title 19 of the CCR establishes a variety of emergency fire response, fire prevention, and construction and construction materials standards.

### **CA Code of Regulations Title 24 (CA Building Standards Code)**

The California Fire Code is set forth in Part 9 of the Building Standards Code. The CA Fire Code, which is pre-assembled with the International Fire Code by the ICC, contains fire-safety building standards referenced in other parts of Title 24.

### **CA Health and Safety Code and UBC Section 13000 et seq.**

State fire regulations are set forth in §13000 *et seq.* of the California Health and Safety Code, which is divided into “Fires and Fire Protection” and “Buildings Used by the Public.” The regulations provide for the enforcement of the UBC and mandate the abatement of fire hazards.

The code establishes broadly applicable regulations, such as standards for buildings and fire protection devices, in addition to regulations for specific land uses, such as childcare facilities and high-rise structures.

### **CA Health and Safety Code Division 11 (Explosives)**

Division 11 of the Health and Safety Code establishes regulations related to a variety of explosive substances and devices, including high explosives and fireworks. Section 12000 *et seq.* establishes regulations related to explosives and explosive devices, including permitting, handling, storage, and transport (in quantities greater than 1,000 pounds).

### **CA Health and Safety Code Division 12.5 (Buildings Used by the Public)**

This Division establishes requirements for buildings used by the public, including essential services buildings, earthquake hazard mitigation technologies, school buildings, and postsecondary buildings.

### **CA Vehicle Code §31600 (Transportation of Explosives)**

Establishes requirements related to the transportation of explosives in quantities greater than 1,000 pounds, including licensing and route identification.

#### *LOCAL*

### **City of Lathrop General Plan**

The existing City of Lathrop General Plan identifies the following goals and policies related to fire:

#### **Hazard Management Element**

**GOAL 1: The reduction of loss of life or property due to crime, fire, earthquake, flooding or other disasters or hazards.**

**GOAL 2: The provision of adequate medical and emergency services to reduce the effects of natural or manmade disasters.**

**GOAL 3: The promotion of citizen awareness and preparedness for emergency/disaster situations or potential for the incidence of crime.**

**GOAL 4: The implementation of adequate inter-agency disaster planning, including evacuation of all or parts of the community to safe areas of the County.**



**POLICY 1:** The City will continue to give high priority to the support of police protection, and to fire suppression and prevention and life safety functions of the Fire Department. Ultimate expansion of the City's fire service is to include additional stations affording adequate response within a maximum of 3-4 minutes to all parts of the urban area.

**POLICY 2:** The City will work to maintain a fire flow standard of 3,000 gpm for all commercial and industrial areas, and 1,500 gpm for residential areas, to assure capability to suppress urban fires.

**POLICY 3:** The City will maintain a street system which is capable of providing access to any fires that may develop within the urban area, and which is capable of providing for the adequate evacuation of residents in the event of an emergency condition of magnitude.

### IDENTIFYING FIRE HAZARDS

#### Fuel Rank

Fuel rank is a ranking system developed by CalFire that incorporates four wildfire factors: fuel model, slope, ladder index, and crown index.

The U.S. Forest Service has developed a series of fuel models, which categorize fuels based on burn characteristics. These fuel models help predict fire behavior. In addition to fuel characteristics, slope is an important contributor to fire hazard levels. A surface ranking system has been developed by CalFire, which incorporates the applicable fuel models and slope data. The model categorizes slope into six ranges: 0-10%, 11-25%, 26-40%, 41-55%, 56-75% and >75%. The combined fuel model and slope data are organized into three categories, referred to as surface rank. Thus, surface rank is a reflection of the quantity and burn characteristics of the fuels and the topography in a given area.

The ladder index reflects the distance from the ground to the lowest leafy vegetation for tree and plant species. The crown index reflects the quantity of leafy vegetation present within individual specimens of a given species.

The surface rank, ladder index, and crown index for a given area are combined in order to establish a fuel rank of medium, high, or very high. Fuel rank is used by CalFire to identify areas in the California Fire Plan where large, catastrophic fires are most likely.

The City of Lathrop contains areas with “moderate” and “non-wildland fuel” ranks. The areas warranting “moderate” fuel ranks possess combustible material in sufficient quantities combined with topographic characteristics that pose a wildfire risk. CalFire data for the areas immediately surrounding the Planning Area also include “moderate” and “non-wildland fuel” ranks. Some areas in Stockton, approximately 10 miles or further north of the Planning Area, are designated as “moderate” fuel ranks.

#### Fire Threat

The fuel rank data are used by CalFire to delineate fire threat based on a system of ordinal ranking. Thus, the Fire Threat model creates discrete regions, which reflect fire probability and predicted fire behavior. The four classes of fire threat range from moderate to extreme.

### FIRE HAZARD SEVERITY ZONES

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The state has charged CalFire with the identification of Fire Hazard Severity Zones (FHSZ) within State Responsibility Areas. In addition, CalFire must recommend Very High Fire Hazard Severity Zones (VHFHSZ) identified within any Local Responsibility Areas. The FHSZ maps are used by the State Fire Marshall as a basis for the adoption of applicable building code standards.

#### **Local Responsibility Areas**

The majority of the Planning Area is not located within a Local Responsibility Area (LRA). Four portions of the Planning Area are located in an LRA: a developed area adjacent south of the Defense Depot San Joaquin Sharpe site and the Sharpe AAF Airport, a developed area near D'Arcy Parkway, an area along the San Joaquin River, just west of Interstate 5, and an undeveloped area along the San Joaquin River in the westernmost Planning Area. According to the City's 2016 Municipal Services Review and Sphere of Influence Amendment, the Lathrop Sphere of Influence is covered by two independent Fire Protection Districts: the Lathrop-Manteca Fire Protection District (LMFD) and French Camp-McKinley Fire District (French Camp). The LMFD provides fire protection services for all lands within the City of Lathrop being primarily lands south of Roth Road in addition to providing service to some 84.7 square miles of rural area around Manteca in the southern San Joaquin County area. The French Camp provides fire protection for the rural area primarily south of Stockton and north of Roth Road both east and west of Interstate 5. French Camp service boundaries include some 16 square miles, including a small portion of Stockton. Approximately 805 acres of the French Camp Fire District is in the Lathrop Area of Interest and about 149 acres is in the Sphere of Influence.

The City of Lathrop is not categorized as a "Very High" FHSZ by CalFire. No cities or communities within San Joaquin County are categorized as a "Very High" FHSZ by CalFire. See Figure 4.3-1. As shown in the figure, much of the Lathrop Sphere of Influence east of the San Joaquin River is located in a Local Responsibility Area: Urban Unzoned. The remaining portions of the City east and west of the River are located in a Local Responsibility Area: Non-Wildland/Non-Urban. There are a few areas within the City that are located in a Local Responsibility Area: Moderate Hazard. These include scattered areas along the San Joaquin River, an area adjacent to Howland Road and north of D'Arcy Parkway, and an area south of E. Lathrop Road and east of McKinley Avenue. Additionally, a Federal Responsibility Area: Moderate Hazard is located adjacent north of E. Lathrop Road, east of McKinley Avenue.

#### **State Responsibility Areas**

There are no State Responsibility Areas (SRAs) within the vicinity of the Planning Area.

#### **Federal Responsibility Areas**

There is one Federal Responsibility Area (FRA) within the Planning Area. The Defense Depot San Joaquin Sharpe site and the Sharpe AAF Airport are located within a FRA. The Depot and Airport are located in northern Lathrop, west of Interstate 5, north of W. Lathrop Road, and south of Roth Road.

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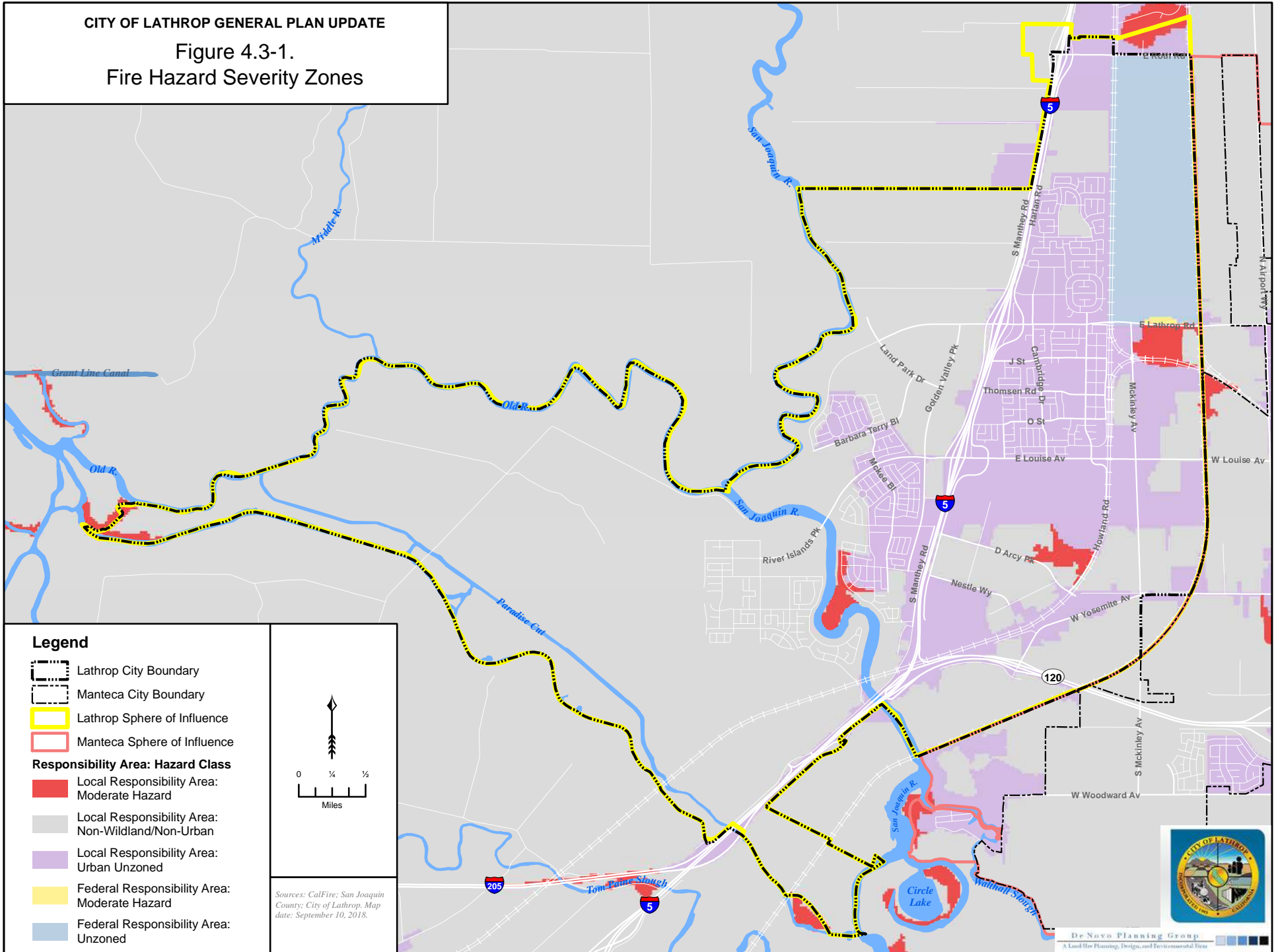
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CITY OF LATHROP GENERAL PLAN UPDATE

Figure 4.3-1.  
Fire Hazard Severity Zones



Sources: CalFire; San Joaquin County; City of Lathrop. Map date: September 10, 2018.

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## 4.4 FLOODING

This section addresses the hazards associated with flooding in the Planning Area. The discussion of storm drainage infrastructure is located in the Community Services and Facilities section of this report.

### REGULATORY FRAMEWORK

#### FEDERAL

#### **Federal Emergency Management Agency (FEMA)**

FEMA operates the National Flood Insurance Program (NFIP). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the California Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

#### **Rivers and Harbors Appropriation Act of 1899**

One of the country's first environmental laws, this Act established a regulatory program to address activities that could affect navigation in Waters of the United States.

#### **Water Pollution Control Act of 1972**

The Water Pollution Control Act (WPCA) established a program to regulate activities that result in the discharge of pollutants to waters of the United States

#### **Clean Water Act of 1977**

The CWA, which amended the WPCA of 1972, sets forth the §404 program to regulate the discharge of dredged and fill material into Waters of the U.S. and the §402 National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants into Waters of the U.S. The §401 Water Quality Certification program establishes a framework of water quality protection for activities requiring a variety of Federal permits and approvals (including CWA §404, CWA §402, FERC Hydropower and §10 Rivers and Harbors).

#### **Flood Control Act**

The Flood Control Act (1917) established survey and cost estimate requirements for flood hazards in the Sacramento Valley. All levees and structures constructed per the Act were to be maintained locally but controlled federally. All rights of way necessary for the construction of flood control infrastructure were to be provided to the Federal government at no cost.

Federal involvement in the construction of flood control infrastructure, primarily dams and levees, became more pronounced upon passage of the Flood Control Act of 1936.

#### **National Flood Insurance Program (NFIP)**

Per the National Flood Insurance Act of 1968, the NFIP has three fundamental purposes: *Better indemnify individuals for flood losses through insurance; Reduce future flood damages through State and community floodplain management regulations; and Reduce Federal expenditures for disaster assistance and flood control.*

While the Act provided for subsidized flood insurance for existing structures, the provision of flood insurance by FEMA became contingent on the adoption of floodplain regulations at the local level.

### **Flood Disaster Protection Act (FDPA)**

The FDPA of 1973 was a response to the shortcomings of the NFIP, which were experienced during the flood season of 1972. The FDPA prohibited Federal assistance, including acquisition, construction, and financial assistance, within delineated floodplains in non-participating NFIP communities. Furthermore, all Federal agencies and/or federally insured and federally regulated lenders must require flood insurance for all acquisitions or developments in designated Special Flood Hazard Areas (SFHAs) in communities that participate in the NFIP.

Improvements, construction, and developments within SFHAs are generally subject to the following standards:

- All new construction and substantial improvements of residential buildings must have the lowest floor (including basement) elevated to or above the base flood elevation (BFE).
- All new construction and substantial improvements of non-residential buildings must either have the lowest floor (including basement) elevated to or above the BFE or dry-floodproofed to the BFE.
- Buildings can be elevated to or above the BFE using fill, or they can be elevated on extended foundation walls or other enclosure walls, on piles, or on columns.
- Extended foundation or other enclosure walls must be designed and constructed to withstand hydrostatic pressure and be constructed with flood-resistant materials and contain openings that will permit the automatic entry and exit of floodwaters. Any enclosed area below the BFE can only be used for the parking of vehicles, building access, or storage.

### *STATE*

#### **Assembly Bill 162**

This bill requires a general plan's land use element to identify and annually review those areas covered by the general plan that are subject to flooding as identified by flood plain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources (DWR). The bill also requires, upon the next revision of the housing element, on or after January 1, 2009, the conservation element of the general plan to identify rivers, creeks, streams, flood corridors, riparian habitat, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management. By imposing new duties on local public officials, the bill creates a State-mandated local program.

This bill also requires, upon the next revision of the housing element, on or after January 1, 2009, the safety element to identify, among other things, information regarding flood hazards and to establish a set of comprehensive goals, policies, and objectives, based on specified information for the protection of the community from, among other things, the unreasonable risks of flooding.

#### **Assembly Bill 70**

This bill provides that a city or county may be required to contribute its fair and reasonable share of the property damage caused by a flood to the extent that it has increased the State's exposure to liability for property damage by unreasonably approving, as defined, new development in a previously undeveloped



area, as defined, that is protected by a State flood control project, unless the city or county meets specified requirements.

### **CA Government Code**

The Senate and Assembly bills identified above have resulted in various changes and additions to the California Government Code. Key sections related to the above referenced bills are identified below.

#### *SECTION 65302*

Revised safety elements must include maps of any 200-year flood plains and levee protection zones within the Planning Area.

#### *SECTION 65584.04*

Any land having inadequate flood protection, as determined by FEMA or DWR, must be excluded from land identified as suitable for urban development within the planning area.

#### *SECTION 8589.4*

California Government Code §8589.4, commonly referred to as the Potential Flooding-Dam Inundation Act, requires owners of dams to prepare maps showing potential inundation areas in the event of dam failure. A dam failure inundation zone is different from a flood hazard zone under the National Flood Insurance Program (NFIP). NFIP flood zones are areas along streams or coasts where storm flooding is possible from a “100-year flood.” In contrast, a dam failure inundation zone is the area downstream from a dam that could be flooded in the event of dam failure due to an earthquake or other catastrophe. Dam failure inundation maps are reviewed and approved by the California Office of Emergency Services (OES). Sellers of real estate within inundation zones are required to disclose this information to prospective buyers.

#### *LOCAL*

### **City of Lathrop General Plan**

The existing City of Lathrop General Plan identifies the following goals and policies related to flooding:

#### **Hazard Management Element**

**GOAL 1: The reduction of loss of life or property due to crime, fire, earthquake, flooding or other disasters or hazards.**

**GOAL 2: The provision of adequate medical and emergency services to reduce the effects of natural or manmade disasters.**

**GOAL 3: The promotion of citizen awareness and preparedness for emergency/disaster situations or potential for the incidence of crime.**

**GOAL 4: The implementation of adequate inter-agency disaster planning, including evacuation of all or parts of the community to safe areas of the County.**

**POLICY 3:** The City will maintain a street system which is capable of providing access to any fires that may develop within the urban area, and which is capable of providing for the adequate evacuation of residents in the event of an emergency condition of magnitude.

## 4.0 HAZARDS, SAFETY, AND NOISE

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**POLICY 4:** The City will continue to maintain and update emergency service plans, including plans for managing emergency operations, the handling of hazardous materials and the rapid cleanup of hazardous materials spills.

**POLICY 5:** The City will continue to cooperate with the County of San Joaquin and other agencies in pre-disaster planning activities such as evacuation required in the event of a serious breach of an upstream dam capable of flooding the community.

**POLICY 6:** The City will seek to reduce the risks and potential for hazards to the public through planning and zoning practices and regulations which avoid hazardous land use relationships, and by the continued and timely adoption of new-edition building and fire codes.

### ENVIRONMENTAL SETTING

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The City of Lathrop is located 10 miles south of downtown Stockton, 20 miles northwest of Modesto, and 60 miles east of San Francisco. The Lathrop Planning Area is situated in the south-central portion of San Joaquin County. The San Joaquin River borders the southwestern edge of the Planning Area.

Lathrop is located in northern San Joaquin Valley. The San Joaquin Valley is the southern section of the Great Central Valley of California; the Sacramento Valley is the northern section. The Great Central Valley is a sedimentary basin, with the Coast Range to the west and the Sierra Nevada to the east. Almost all of the sediments that fill the Great Central Valley eroded from the Sierra Nevada. The oldest of these sediments are full of fragments of volcanic rocks eroded from its early volcanoes. As erosion stripped the cover of volcanic rocks from the granites of the Sierra Nevada, their detritus of pale quartz and feldspar sand began to wash into the Great Central Valley. Drainage into the San Joaquin Valley is mainly from the Sierra Nevada. The sediments on the valley floor were deposited within the past one-two million years, some within the past few thousand years.

Generally, slopes are nearly level across the Planning Area. The elevation ranges from approximately five to 25 feet above sea level, gently rising from the San Joaquin River on the west toward the east.

#### **Climate**

The Lathrop area's climate is considered semi-arid. Spring, summer, and fall are generally warm, with temperatures often reaching over 100 degrees Fahrenheit (°F) on summer days. Lathrop's winters are usually mild, although the dense "Tule fog" can last for weeks. Rainfall in the area averages 13.8 inches per year and is generally confined to the wet season from late October to early May.

#### **FEMA Flood Zones**

FEMA mapping provides important guidance for the City in planning for flooding events and regulating development within identified flood hazard areas. FEMA's National Flood Insurance Program (NFIP) is intended to encourage State and local governments to adopt responsible floodplain management programs and flood measures. As part of the program, the NFIP defines floodplain and floodway boundaries that are shown on Flood Insurance Rate Maps (FIRMs). The FEMA FIRM for the Planning Area is shown on Figure 4.4-1.

Areas that are subject to flooding are indicated by a series of alphabetical symbols, indicating anticipated exposure to flood events:

- **Zone A:** Subject to 100-year flooding with no base flood elevation determined. Identified as an area that has a one percent chance of being flooded in any given year.
- **Zone AE:** Subject to 100-year flooding with base flood elevations determined.
- **Zone AH:** Subject to 100-year flooding with flood depths between one and three feet being areas of ponding with base flood elevations determined.
- **500-year Flood Zone:** Subject to 500-year flooding. Identified as an area that has a 0.2 percent chance of being flooded in a given year.

The Planning Area is subject to flooding problems along the natural creeks and drainages that traverse the area. The primary flood hazard is the San Joaquin River and its tributaries, notably Paradise Cut (along the southwestern SOI boundary). A levee running from Airport Way in Manteca west and northwest along the San Joaquin River provides flood protection for the land north and east of the River. This levee is under the jurisdiction of Reclamation District No. 17 (RD 17).

The 100-year flood plain is largely confined to the southern and western portions of the City limits and SOI. Additionally, the 500-year flood plain is located in the eastern and northern portions of the City limits and SOI.

### SB 5 Flood Zones

Both State policy and recently enacted State legislation (Senate Bill 5) call for 200-year (0.5% annual chance) flood protection to be the minimum level of protection for urban and urbanizing areas in the Central Valley. Senate Bill 5 (SB5) requires that the 200-year protection be consistent with criteria used or developed by the Department of Water Resources. SB 5 requires all urban and urbanizing areas in the Sacramento and San Joaquin Valleys to achieve 200-year Urban Level of flood protection (or a finding of adequate progress toward 200-year flood protection) in order to approve development. The 200-year floodplain for the Planning Area, as mapped for the City of Lathrop and San Joaquin County, is shown on Figure 4.4-2. As shown in the figure, nearly the entire City and SOI is located in the 200-year floodplain.

Lathrop, Manteca, Stockton, RD-17, and the County are part of San Joaquin Area Flood Control Agency (SJAFCA). In an effort to further its flood risk reduction efforts and serve its constituents, SJAFCA is currently going through a strategic planning process. This will allow the agency to coordinate among its stakeholders, identify needs, and set its goals and objectives to ensure 200 year flood protection.

### Dam Inundation

Earthquakes centered close to a dam are typically the most likely cause of dam failure. Dam Inundation maps have been required in California since 1972, following the 1971 San Fernando Earthquake and near failure of the Lower Van Norman Dam. The Planning Area has the potential to be inundated by four dams: Tulloch Dam, San Luis Dam, New Exchequer Dam (Lake McClure), and New Melones Dam. The dam inundation area for each dam is shown in Figure 4.4-3. Each dam is briefly described below:

- The Tulloch Dam, owned and operated by the Oakdale and South San Joaquin Irrigation Districts (collectively known as the Tri-Dam Project), is a gravity dam located on the Stanislaus River in both Calaveras and Tuolumne Counties. This dam was built in 1958 at a height of 205 feet with a reservoir capacity of 68,400 acre-feet. The Tulloch Dam is a jurisdictional dam.

## 4.0 HAZARDS, SAFETY, AND NOISE

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- The San Luis Dam (or B.F. Sisk Dam), jointly owned and operated by the Bureau of Reclamation and the State of California, is a zoned earthfill dam that provides supplemental irrigation water to land in western Merced, Fresno and Kings Counties, as well as generates power. This dam, located on San Luis Creek near Los Banos, was completed in 1967 at a height of 382 feet with a reservoir capacity of 2,041,000 acre-feet. The San Luis Dam is a non-jurisdictional dam.
- Pine Flat Dam is a concrete gravity structure completed by the United States Army Corps of Engineers in 1954. The Pine Flat Dam is utilized for flood control, irrigation, power production, and recreation. This solid concrete gravity dam is located on the Kings River north of Squaw Valley in Fresno County. Pine Flat Dam has a height of 440 feet and a storage capacity of 1,000,000 acre-feet. The Pine Flat Dam is a jurisdictional dam.
- The New Melones Dam, owned and operated by Bureau of Reclamation's Central Valley Project, is utilized for irrigation, power production, and downstream flood control. This earth and rockfill dam is located on the Stanislaus River in southern Mother Lode, off of Highway 49. New Melones Dam was completed in 1979 at a height of 625 feet and a storage capacity of 2,400,000 acre-feet. The New Melones Dam is a non-jurisdictional dam.
- The New Exchequer Dam, owned and operated by the Merced Irrigation District, is utilized for irrigation, power production, and downstream flood control. This concrete gravity-arch dam is located on the Merced River in Mariposa County. New Melones Dam was completed in 1967 at a height of 490 feet and a storage capacity of 1,024,600 acre-feet. The New Exchequer Dam is a jurisdictional dam.

These dams do not have a history of failure; however, they are identified as having the potential to inundate the Planning Area in the unlikely event of dam failure. The dam owners/operators, Oakdale and South San Joaquin Irrigation Districts, the Merced Irrigation District, the Bureau of Reclamation, the United States Army Corps of Engineers, and the State of California, are responsible for the management, monitoring, and improvements to these dams to reduce the risk of dam failure and inundation.

As shown in Figure 4.4-3, the entire Planning Area would be subject to inundation in the event of dam failure. Despite the number of dams near San Joaquin County, the risk of dam failure inundating portions of the County is considered low, and the degree and nature of risk for each dam is unknown. Dam failure can occur under three general conditions: as a result of an earthquake, an isolated incident due to structural instability, or because of intense rain in excess of design capacity.

Section 8589.5 of the California Government Code requires local jurisdictions to adopt emergency procedures for the evacuation of populated inundation areas identified by dam owners. The local Office of Emergency Services has prepared a Dam Failure Plan. This plan includes a description of dams, direction of floodwaters, responsibilities of local jurisdictions, and evacuation plans.

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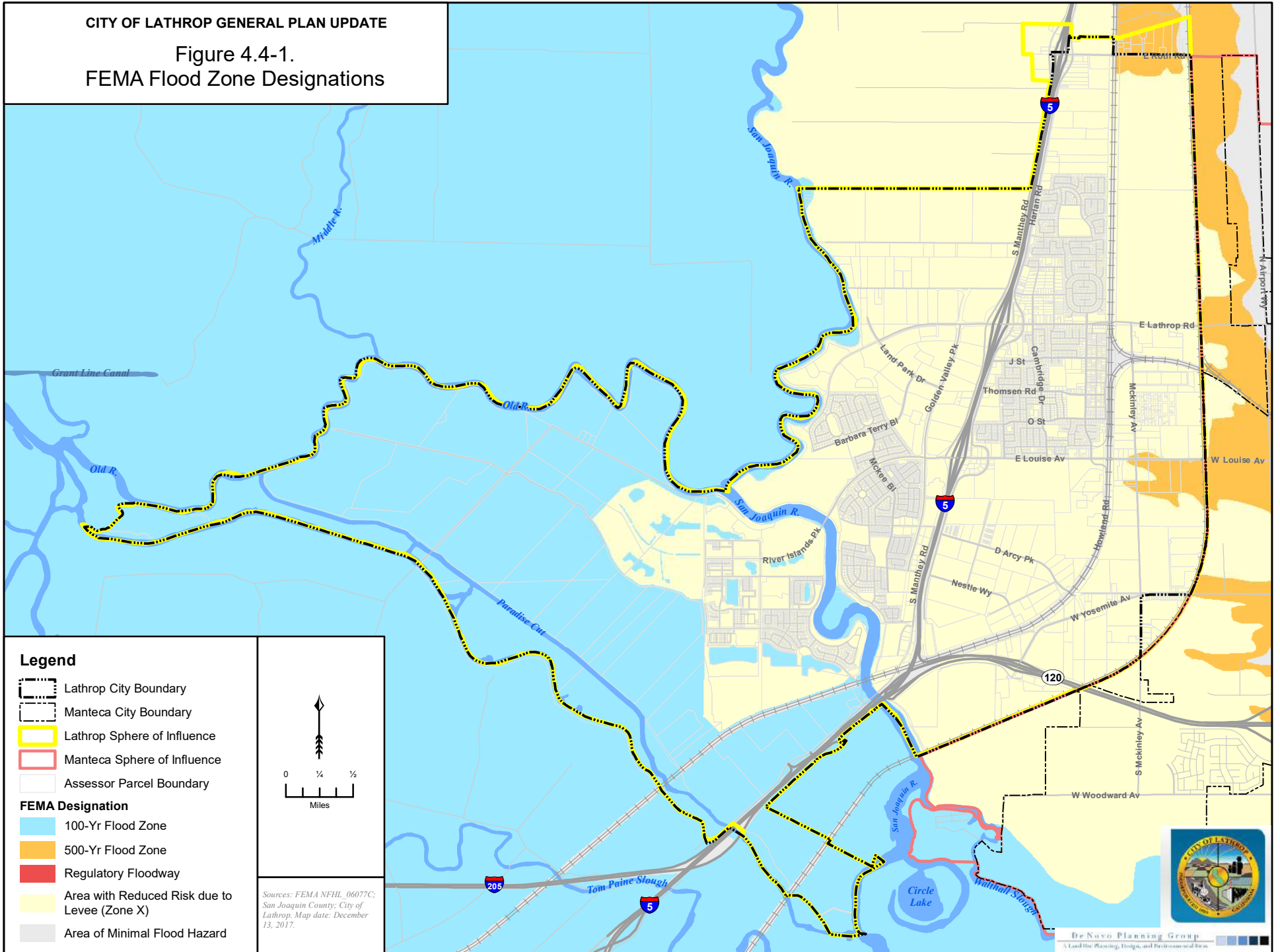
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CITY OF LATHROP GENERAL PLAN UPDATE

Figure 4.4-1.  
FEMA Flood Zone Designations



**Legend**

- Lathrop City Boundary
- Manteca City Boundary
- Lathrop Sphere of Influence
- Manteca Sphere of Influence
- Assessor Parcel Boundary

**FEMA Designation**

- 100-Yr Flood Zone
- 500-Yr Flood Zone
- Regulatory Floodway
- Area with Reduced Risk due to Levee (Zone X)
- Area of Minimal Flood Hazard



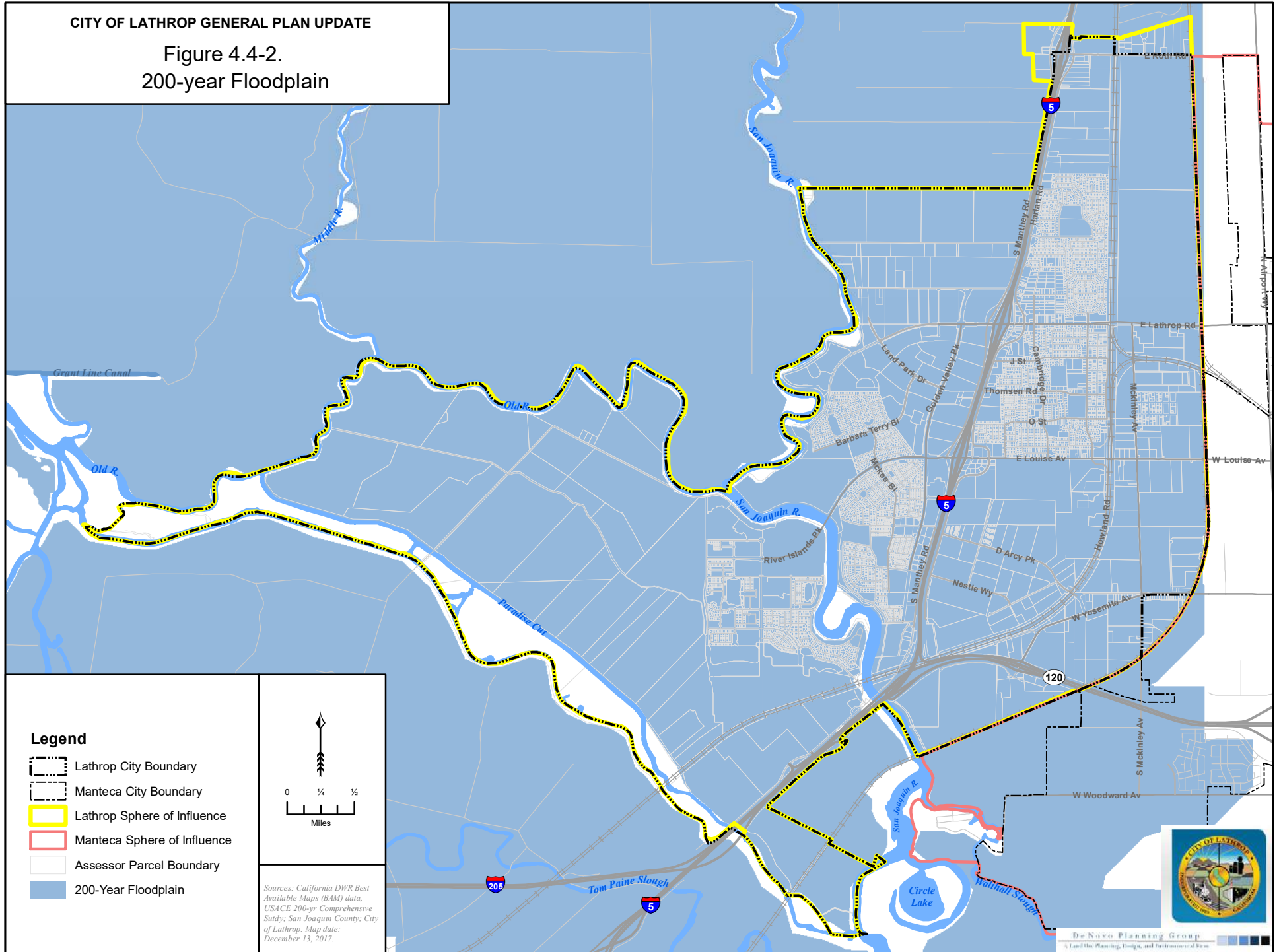
Sources: FEMA NFHL\_06077C;  
San Joaquin County; City of  
Lathrop. Map date: December  
13, 2017.









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Figure 4.4-2.  
200-year Floodplain



**Legend**

-  Lathrop City Boundary
-  Manteca City Boundary
-  Lathrop Sphere of Influence
-  Manteca Sphere of Influence
-  Assessor Parcel Boundary
-  200-Year Floodplain

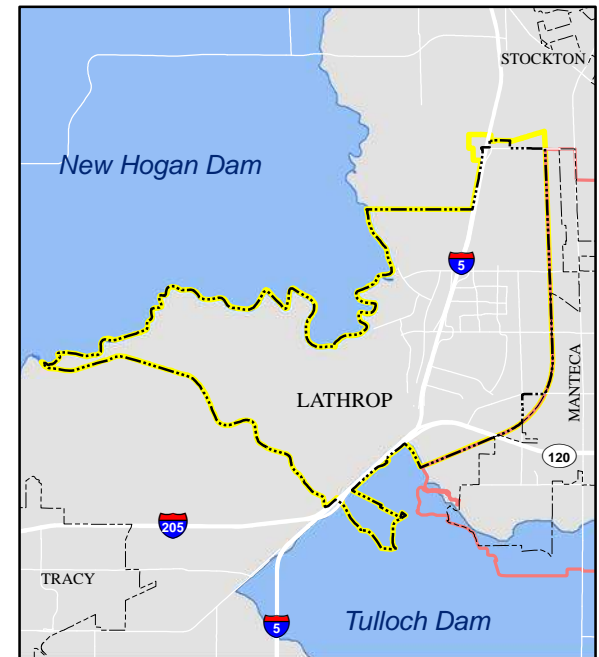
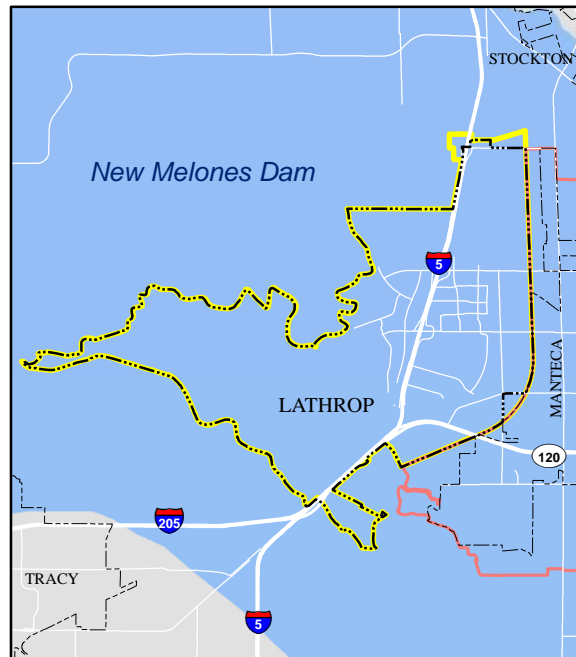
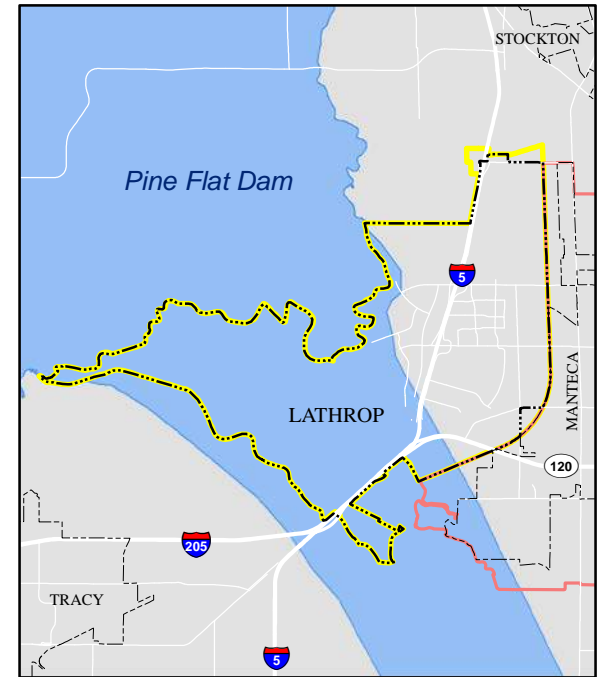
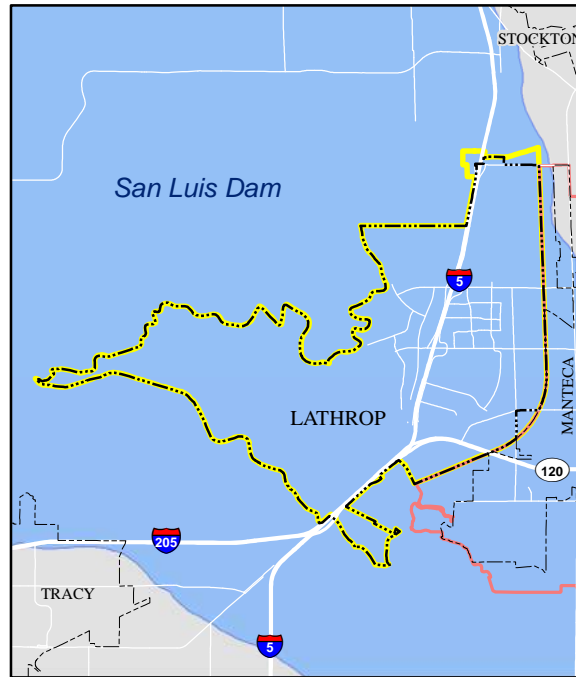
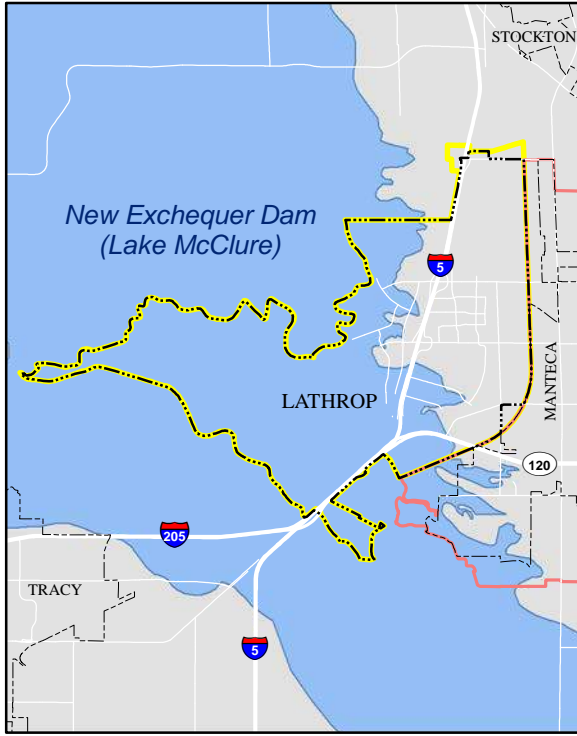


Sources: California DWR Best Available Maps (BAM) data, USACE 200-yr Comprehensive Study; San Joaquin County; City of Lathrop. Map date: December 13, 2017.








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Figure 4.4-3.  
Dam Inundation Areas



**Legend**

-  Lathrop City Boundary
-  Surrounding City Limits
-  Lathrop Sphere of Influence
-  Manteca Sphere of Influence
-  Dam Inundation Area



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## 4.5 NOISE

This section provides a discussion of the regulatory setting and a general description of existing noise sources in the City of Lathrop. The analysis in this section was prepared with assistance from Saxelby Acoustics.

### KEY TERMS

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<b>Acoustics</b>	The science of sound.
<b>Ambient Noise</b>	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
<b>Attenuation</b>	The reduction of noise.
<b>A-Weighting</b>	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
<b>CNEL</b>	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 p.m. - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
<b>Decibel or dB</b>	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
<b>Frequency</b>	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
<b>Impulsive</b>	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
<b>L<sub>dn</sub></b>	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
<b>L<sub>eq</sub></b>	Equivalent or energy-averaged sound level.
<b>L<sub>max</sub></b>	The highest root-mean-square (RMS) sound level measured over a given period of time.
<b>L<sub>(n)</sub></b>	The sound level exceeded as a described percentile over a measurement period. For instance, an hourly L <sub>50</sub> is the sound level exceeded 50 percent of the time during the one-hour period.
<b>Loudness</b>	A subjective term for the sensation of the magnitude of sound.
<b>Noise</b>	Unwanted sound.
<b>SEL</b>	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event

### FUNDAMENTALS OF ACOUSTICS

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Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

## 4.0 HAZARDS, SAFETY, AND NOISE

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Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected, or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals) as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level ( $L_{eq}$ ), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The  $L_{eq}$  is the foundation of the composite noise descriptor,  $L_{dn}$ , and shows very good correlation with community response to noise.

The day/night average level ( $L_{dn}$ ) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because  $L_{dn}$  represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to  $L_{dn}$ , but includes a +3 dB penalty for evening noise.

Table 4.5-1 lists several examples of the noise levels associated with common situations.

**TABLE 4.5-1: TYPICAL NOISE LEVELS**

<i>COMMON OUTDOOR ACTIVITIES</i>	<i>NOISE LEVEL (dBA)</i>	<i>COMMON INDOOR ACTIVITIES</i>
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL, NOVEMBER 2009.

## EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and

## 4.0 HAZARDS, SAFETY, AND NOISE

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- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e., atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

### REGULATORY FRAMEWORK

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#### *FEDERAL*

#### **Federal Highway Administration (FHWA)**

The FHWA has developed noise abatement criteria that are used for Federally funded roadway projects or projects that require Federal review. These criteria are discussed in detail in Title 23 Part 772 of the Federal Code of Regulations (23CFR772).

#### **Environmental Protection Agency (EPA)**

The EPA has identified the relationship between noise levels and human response. The EPA has determined that over a 24-hour period, an  $L_{eq}$  of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an  $L_{eq}$  of 55 dBA and interior levels at or below 45 dBA. Although these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community.

The EPA has set 55 dBA  $L_{dn}$  as the basic goal for residential environments. However, other Federal agencies, in consideration of their own program requirements and goals, as well as difficulty of actually achieving a goal of 55 dBA  $L_{dn}$ , have generally agreed on the 65 dBA  $L_{dn}$  level as being appropriate for residential uses. At 65 dBA  $L_{dn}$  activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

The U.S. Department of Housing and Urban Development (HUD) was established in response to the Urban Development Act of 1965 (Public Law 90-448). HUD was tasked by the Act (Public Law 89-117) “to determine feasible methods of reducing the economic loss and hardships suffered by homeowners as a result of the depreciation in the value of their properties following the construction of airports in the vicinity of their homes.”

HUD first issued formal requirements related specifically to noise in 1971 (HUD Circular 1390.2). These requirements contained standards for exterior noise levels along with policies for approving HUD-supported or assisted housing projects in high noise areas. In general, these requirements established the following three zones:

- 65 dBA  $L_{dn}$  or less - an acceptable zone where all projects could be approved.
- Exceeding 65 dBA  $L_{dn}$  but not exceeding 75 dBA  $L_{dn}$  - a normally unacceptable zone where mitigation measures would be required and each project would have to be individually evaluated for approval or denial. These measures must provide 5 dBA of attenuation above the attenuation provided by standard construction required in a 65 to 70 dBA  $L_{dn}$  area and 10 dBA of attenuation in a 70 to 75 dBA  $L_{dn}$  area.



- Exceeding 75 dBA  $L_{dn}$  - an unacceptable zone in which projects would not, as a rule, be approved.

HUD's regulations do not include interior noise standards. Rather a goal of 45 dBA  $L_{dn}$  is set forth and attenuation requirements are geared towards achieving that goal. HUD assumes that using standard construction techniques, any building will provide sufficient attenuation so that if the exterior level is 65 dBA  $L_{dn}$  or less, the interior level will be 45 dBA  $L_{dn}$  or less. Thus, structural attenuation is assumed at 20 dBA. However, HUD regulations were promulgated solely for residential development requiring government funding and are not related to the operation of schools or churches.

The Federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the EPA. Noise exposure of this type is dependent on work conditions and is addressed through a facility's or construction contractor's health and safety plan. With the exception of construction workers involved in facility construction, occupational noise is irrelevant to this study and is not addressed further in this document.

### *STATE*

#### **California Department of Transportation (Caltrans)**

Caltrans has adopted policy and guidelines relating to traffic noise as outlined in the Traffic Noise Analysis Protocol (Caltrans 1998b). The noise abatement criteria specified in the protocol are the same as those specified by FHWA.

#### **Governor's Office of Planning and Research (OPR)**

OPR has developed guidelines for the preparation of general plans (Office of Planning and Research, 1998). The guidelines include land use compatibility guidelines for noise exposure.

### *LOCAL*

#### **City of Lathrop General Plan**

The Goals of the Noise Element of the General Plan are to protect citizens from the harmful effects of exposure to excessive noise, and to protect the economic base of the City by preventing the encroachment of incompatible land uses near noise-producing roadways, industries, the railroad, and other sources.

The following policies reflect the commitment of the City to the noise-related goal outlined above:

1. Areas within the City shall be designated as noise-impacted if exposed to existing or projected future noise levels exterior to buildings exceeding 60 dB CNEL or the performance standards prescribed in Table VI-1 [reproduced as Table 4.5-2].

## 4.0 HAZARDS, SAFETY, AND NOISE

**TABLE 4.5-2: EXTERIOR HOURLY NOISE LEVEL PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES**

EXTERIOR NOISE LEVEL STANDARDS*						
RECEIVING LAND USE	NIGHTTIME (10 PM – 7 AM)			DAYTIME (7 AM – 10 PM)		
	RS	S	U	RS	S	U
One and Two Family Residential	40 dB	45 dB	50 dB	50 dB	55 dB	60 dB
Multi-Family Residential	45 dB	50 dB	55 dB	50 dB	55 dB	60 dB
Public Space	50 dB	55 dB	60 dB	50 dB	55 dB	60 dB
Limited Commercial		55 dB			60 dB	
Commercial		60 dB			65 dB	
Light Industrial		70 dB			70 dB	
Heavy Industrial		75 dB			75 dB	

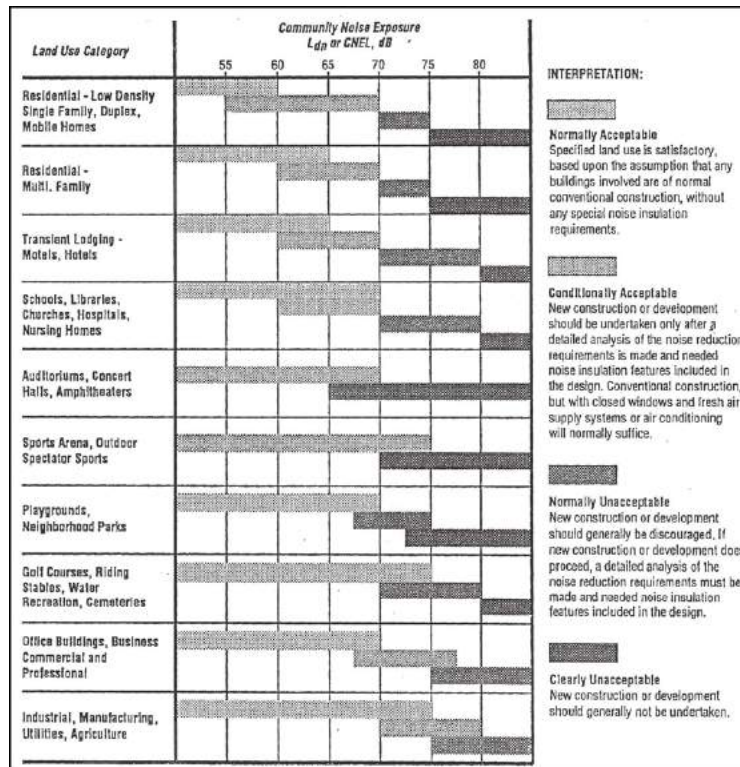
NOTE: RS-RURAL SUBURBAN, S-SUBURBAN, U-URBAN

NIGHTTIME 10 PM – 7 AM	NOISE CATEGORY	CUMULATIVE # OF MIN/1-HOUR PERIOD	DAYTIME 7AM – 10 PM
45 dB	1	30	55
50 dB	2	15	60
55 dB	3	5	65
60 dB	4	1	70
65 dB	5	0	75

\*EACH OF THE NOISE LEVEL STANDARDS SPECIFIED SHALL BE REDUCED BY FIVE (5) dB FOR PURE TONE NOISES, NOISE CONSISTING PRIMARILY OF SPEECH OR MUSIC, OR FOR RECURRING IMPULSIVE NOISES. THE STANDARDS SHOULD BE APPLIED AT A RESIDENTIAL OR OTHER NOISE-SENSITIVE LAND USE AND NOT ON THE PROPERTY OF A NOISE-GENERATING LAND USE. NIGHTTIME AND DAYTIME STANDARDS ARE MEASURED BY dB.

SOURCE: LATHROP GENERAL PLAN, TABLE VI-1.

2. New development of residential or other noise sensitive land uses will not be permitted in noise impacted areas unless effective mitigation measures are incorporated into project designs to reduce noise to the following levels:



SOURCE: LATHROP GENERAL PLAN, FIGURE VI-1.

- 2a. Noise sources preempted from local control, such as railroad and highway traffic:
- 60 dB CNEL or less in outdoor activity areas;
  - 45 dB CNEL within interior living spaces or other noise-sensitive interior spaces.
  - Where it is not possible to achieve reductions of exterior noise to 60 dB CNEL or less by using the best available and practical noise reduction technology, an exterior noise level of up to 65 dB CNEL will be allowed.
  - Under no circumstances will interior noise levels be allowed to exceed 45 dB CNEL with windows and doors closed.
- 2b. For noise from other sources, such as local industries:
- 60 dB CNEL or less in outdoor activity areas;
  - 45 dB CNEL or less within interior living spaces, plus the performance standards contained in Table VI-1 [reproduced as Table 4.5-2].
3. New development of industrial, commercial or other noise generating land uses will not be permitted if resulting noise levels will exceed 60 dB CNEL in areas containing residential or other noise-sensitive land uses. Additionally, new noise generating land uses which are not preempted from local noise regulation by the State of California will not be permitted if resulting noise levels will exceed the performance standards contained in Table VI-1 [reproduced as Table 4.5-2] in areas containing residential or other noise-sensitive land uses.
4. Noise level criteria applied to land uses other than residential or other noise-sensitive uses shall be consistent with the recommendations of the California Office of Noise Control.
5. New equipment and vehicles purchased by the City shall comply with noise level performance standards consistent with the best available noise reduction technology.

### City of Lathrop Municipal Code – Noise Ordinance

The City of Lathrop Noise Ordinance sets limits for community noise exposure, similar to those outlined above in the General Plan Noise Element. The Noise Ordinance standards are contained in Section 8.20.040 of the Lathrop Municipal Code. Construction activities are exempt from these regulations, when conducted according to Section 8.20.110, as outlined below.

Sound Level A, Decibels Community Environment Classification				
Zone	Time	Very Quiet	Slightly Quiet	Noisy
		(rural, suburban)	(suburban, urban)	(urban)
<b>R1 and R2</b>	10 pm to 7 am	40	45	50
	7 pm to 10 pm	45	50	55
	7 am to 7 pm	50	55	60
<b>R3 and R4</b>	10 pm to 7 am	45	50	55
	7 am to 10 pm	50	55	60
<b>Commercial</b>	10 pm to 7 am	50	55	60
	7 am to 10 pm	55	60	65
<b>M1</b>	anytime	70	70	70
<b>M2</b>	anytime	75	75	75

#### 8.20.110 CONSTRUCTION OF BUILDINGS AND PROJECTS.

It shall be unlawful for any person within a residential zone or within a radius of five hundred (500) feet therefrom, to operate equipment or perform any outside construction or repair work on buildings,

## 4.0 HAZARDS, SAFETY, AND NOISE

structures or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hours of ten p.m. of one day and seven a.m. of the next day, or eleven p.m. and nine a.m. Fridays, Saturdays and legal holidays, in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefore has been duly obtained from the office or body of the city having the function to issue permits of this kind. No permit shall be required to perform emergency work as defined in Sections 8.20.010 through 8.20.040. (Prior code § 99.40).

### EXISTING NOISE LEVELS

#### Traffic Noise Levels

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop  $L_{dn}$  (24-hour average) noise contours for all highways and major roadways in the Planning Area. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA Model predicts hourly  $L_{eq}$  values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict  $L_{dn}$  values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Existing traffic volumes were obtained from the traffic modeling performed for the General Plan study area. Day/night traffic distributions were based upon continuous hourly noise measurement data. Caltrans vehicle truck counts were obtained for Interstate 5 and State Route 120. Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions. Table 4.5-3 shows the results of this analysis.

**TABLE 4.5-3: PREDICTED EXISTING TRAFFIC NOISE LEVELS**

ROADWAY	SEGMENT	NOISE LEVEL AT CLOSEST RECEPTORS ( $dB, L_{DN}$ ) <sup>1</sup>	DISTANCES TO TRAFFIC NOISE CONTOURS, $L_{DN}$ (FEET)		
			70 DB	65 DB	60 DB
Roth Rd.	I-5 to Harlan Rd.	68.4	363	168	78
Roth Rd.	Harlan Rd. to McKinley Ave.	64.8	210	98	45
Roth Rd.	McKinley Ave. to City Limit	62.8	165	77	36
Harlan Rd.	south of Roth Rd.	66.0	253	117	54
Harlan Rd.	north of Lathrop Rd.	62.6	150	70	32
Harlan Rd.	south of Lathrop Rd.	66.6	138	64	30
Harlan Rd.	north of Louise Ave.	56.7	103	48	22
Harlan Rd.	Louise Ave. to D'Arcy Pkwy.	62.1	138	64	30
Lathrop Rd.	I-5 to Harlan Rd.	63.9	182	85	39
Lathrop Rd.	Harlan Rd. to 5th St.	66.2	129	60	28
Lathrop Rd.	5th St. to McKinley Ave.	66.8	211	98	46
Lathrop Rd.	McKinley Ave. to City Limit	64.7	204	95	44
Spartan Wy.	Golden Villy. Pkwy. to Lathrop HS	56.3	57	26	12
Spartan Wy.	I-5 to Golden Valley Pkwy.	58.5	80	37	17
Golden Villy. Pkwy.	Spartan Wy. to River Islands Pkwy.	61.2	121	56	26

## 4.0 HAZARDS, SAFETY, AND NOISE

ROADWAY	SEGMENT	NOISE LEVEL AT CLOSEST RECEPTORS (DB, L <sub>DN</sub> ) <sup>1</sup>	DISTANCES TO TRAFFIC NOISE CONTOURS, L <sub>DN</sub> (FEET)		
			70 DB	65 DB	60 DB
Golden Villy. Pkwy.	River Isl. Pkwy. to Towne Centre Dr.	57.4	116	54	25
Cambridge Ave.	south of Lathrop Rd.	54.5	22	10	5
Cambridge Ave.	north of Louise Ave.	55.9	27	12	6
5th St.	south of Lathrop Rd.	57.3	33	15	7
5th St.	north of Louise Ave.	55.8	26	12	6
McKinley Ave.	south of Lathrop Road	61.5	63	29	14
McKinley Ave.	south of Louise Avenue	60.8	113	53	24
River Isl. Pkwy.	west of McKee Boulevard	54.0	64	30	14
River Isl. Pkwy.	Golden Villy. Pkwy. to McKee Blvd.	58.6	174	81	37
Louise Ave.	I-5 to Golden Valley Pkwy.	64.9	213	99	46
Louise Ave.	I-5 to Harlan Rd.	67.5	318	148	69
Louise Ave.	Harlan Rd. to McKinley Ave.	62.1	224	104	48
Louise Ave.	McKinley Ave. and City Limit	64.6	202	94	43
McKee Blvd.	River Isl. Pkwy. to Towne Centre Dr.	56.0	27	13	6
Towne Center Dr.	Golden Villy. Pkwy. to McKee Blvd.	49.1	19	9	4
D'Arcy Pkwy.	east of Harlan Rd.	56.6	59	27	13
D'Arcy Pkwy.	north of Yosemite Ave.	51.1	51	24	11
Manthey Rd.	Towne Centre Dr. to Stewart Rd.	57.1	64	30	14
Yosemite Ave.	D'Arcy Pwky. to McKinley Ave.	61.1	118	55	25
Yosemite Ave.	McKinley Ave. to City Limit	65.0	161	75	35
Yosemite Ave.	south of SR 120	47.6	15	7	3
Yosemite Ave.	SR 120 to D'Arcy Pkwy.	62.9	155	72	33
Somerston Pkwy.	north of Lakeside Dr.	55.0	23	11	5
Somerston Pkwy.	Manthey Rd. to Lakeside Dr.	57.4	34	16	7
Lakeside Dr.	Stewart Rd. and Somerston Pkwy.	55.4	25	12	5
Paradise Rd.	Stewart Rd. and City Limit	44.0	9	4	2
I-5	north of SR 120	79.7	4141	1922	892
I-5	South of SR 120	76.8	5264	2443	1134
SR 120	east of I-5	72.9	2887	1340	622

NOTES: DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.

<sup>1</sup> TRAFFIC NOISE LEVELS ARE PREDICTED AT THE CLOSEST SENSITIVE RECEPTORS.

SOURCE: FEHR & PEERS TRANSPORTATION CONSULTANTS, CALTRANS, AND SAXELBY ACOUSTICS, 2018.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segments. In some locations sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from

## 4.0 HAZARDS, SAFETY, AND NOISE

intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 4.5-3 are generally considered to be conservative estimates of noise exposure along roadways in the City of Lathrop.

### Railroad Noise Levels

To quantify noise exposure from existing train operations, a continuous (24-hour) noise level measurement survey was conducted along the westernmost Union Pacific Railroad (UPRR) line. Noise measurement data for the easternmost UPRR line which also carries commuter trains for the Altamont Corridor Express (ACE) was obtained from the Existing Conditions Report for the City of Manteca General Plan Update (De Novo Planning Group, October 2017).

The purpose of the noise level measurements was to determine typical sound exposure levels (SEL) for railroad line operations, while accounting for the effects of travel speed, warning horns and other factors which may affect noise generation. In addition, the noise measurement equipment was programmed to identify individual train events, so that the typical number of train operations could be determined.

Table 4.5-4 shows a summary of the continuous noise measurement results for railroad activity within the City.

**TABLE 4.5-4: RAILROAD NOISE MEASUREMENT RESULTS**

MEASUREMENT LOCATION	RAILROAD TRACK	GRADE CROSSING / WARNING HORN	TRAIN EVENTS PER 24-HOUR PERIOD	AVERAGE SEL AT 50 FEET
LT-3	UPRR	No grade crossing. No horn usage observed.	16	104 dBA
Lathrop/Manteca Rail Station	UPRR/ACE	Yes	26	108 dBA

SOURCE SAXELBY ACOUSTICS, 2018.

Noise measurement equipment consisted of Larson Davis Laboratories (LDL) model 831 precision integrating sound level meters equipped with a GRAS ½" microphone. The measurement system was calibrated using a B&K 4230 acoustical calibrator before and after testing. Audio recordings of events were captured along with sound measurement data to help with source identification of events. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

To determine the distances to the  $L_{dn}$  railroad contours, it is necessary to calculate the  $L_{dn}$  for typical train operations. This was done using the SEL values and above-described number and distribution of daily train operations. The  $L_{dn}$  may be calculated as follows:

$$L_{dn} = SEL + 10 \log N_{eq} - 49.4 \text{ dB, where:}$$

SEL is the mean Sound Exposure Level of the event,  $N_{eq}$  is the sum of the number of daytime events (7 a.m. to 10 p.m.) per day, plus 10 times the number of nighttime events (10 p.m. to 7 a.m.) per day, and 49.4 is ten times the logarithm of the number of seconds per day. Based upon the above-described noise

level data, number of operations and methods of calculation, the  $L_{dn}$  value for railroad line operations have been calculated, and the distances to the  $L_{dn}$  noise level contours are shown in Table 4.5-5.

**TABLE 4.5-5: APPROXIMATE DISTANCES TO THE RAILROAD NOISE CONTOURS**

EXTERIOR NOISE LEVEL AT 100 FEET, $L_{DN}$	DISTANCE TO EXTERIOR NOISE LEVEL CONTOURS, FEET		
	60 dB $L_{DN}$	65 dB $L_{DN}$	70 dB $L_{DN}$
<i>UPRR - WITHOUT WARNING HORNS</i>			
69 dB	372	173	80
<i>UPRR / ACE - WITH WARNING HORNS</i>			
77 dB	642'	298'	138'

SOURCE: SAXELBY ACOUSTICS, 2018.

### Fixed Noise Sources

The production of noise is a result of many industrial processes, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by Federal and State employee health and safety regulations (OSHA and Cal-OSHA), but exterior noise levels may exceed locally acceptable standards. Commercial, recreational, and public service facility activities can also produce noise which affects adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which have a potential to annoy individuals who live nearby. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day, and existing ambient noise levels.

In the City of Lathrop, fixed noise sources typically include parking lots, loading docks, parks, schools, and other commercial/retail use noise sources (HVAC, exhaust fans, etc.)

From a land use planning perspective, fixed-source noise control issues focus upon two goals:

1. To prevent the introduction of new noise-producing uses in noise-sensitive areas, and
2. To prevent encroachment of noise sensitive uses upon existing noise-producing facilities.

The first goal can be achieved by applying noise level performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses in near proximity to noise-producing facilities include mitigation measures that would ensure compliance with noise performance standards.

Fixed noise sources which are typically of concern include but are not limited to the following:

- HVAC Systems
- Pump Stations
- Steam Valves
- Generators
- Air Compressors
- Conveyor Systems
- Pile Drivers
- Drill Rigs
- Welders
- Outdoor Speakers
- Chippers
- Cooling Towers/Evaporative Condensers
- Lift Stations
- Steam Turbines
- Fans
- Heavy Equipment
- Transformers
- Grinders
- Gas or Diesel Motors
- Cutting Equipment
- Blowers
- Cutting Equipment

## 4.0 HAZARDS, SAFETY, AND NOISE

- Loading Docks
- Amplified Music and Voice

The types of uses which may typically produce the noise sources described above include, but are not limited to: wood processing facilities, pump stations, industrial/agricultural facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, and special events such as concerts and athletic fields. Typical noise levels associated with various types of stationary noise sources are shown in Table 4.5-6.

**TABLE 4.5-6: TYPICAL STATIONARY SOURCE NOISE LEVELS**

USE	NOISE LEVEL AT 100 FEET, LEQ <sup>1</sup>	DISTANCE TO NOISE CONTOURS, FEET			
		50 DB LEQ (NO SHIELDING)	45 DB LEQ (NO SHIELDING)	50 DB LEQ (WITH 5 DB SHIELDING)	45 DB LEQ (WITH 5 DB SHIELDING)
Auto Body Shop	56 dB	200	355	112	200
Auto Repair (Light)	53 dB	141	251	79	141
Busy Parking Lot	54 dB	158	281	89	158
Cabinet Shop	62 dB	398	708	224	398
Car Wash	63 dB	446	792	251	446
Cooling Tower	69 dB	889	1,581	500	889
Loading Dock	66 dB	596	1,059	335	596
Lumber Yard	68 dB	794	1,413	447	794
Maintenance Yard	68 dB	794	1,413	447	794
Outdoor Music Venue	90 dB	10,000	17,783	5,623	10,000
Paint Booth Exhaust	61 dB	355	631	200	355
School Playground / Neighborhood Park	54 dB	158	281	89	158
Skate Park	60 dB	316	562	178	316
Truck Circulation	48 dB	84	149	47	84
Vendor Deliveries	58 dB	251	446	141	251

<sup>1</sup> ANALYSIS ASSUMES A SOURCE-RECEIVER DISTANCE OF APPROXIMATELY 100 FEET, NO SHIELDING, AND FLAT TOPOGRAPHY. ACTUAL NOISE LEVELS WILL VARY DEPENDING ON SITE CONDITIONS AND INTENSITY OF THE USE. THIS INFORMATION IS INTENDED AS A GENERAL RULE ONLY, AND IS NOT SUITABLE FOR FINAL SITE-SPECIFIC NOISE STUDIES.

SOURCE: SAXELBY ACOUSTICS, 2018.

### COMMUNITY NOISE SURVEY

A community noise survey was conducted to document ambient noise levels at various locations throughout the City. Short-term noise measurements were conducted at five locations throughout the City on Thursday February 22, 2018. In addition, three continuous 24-hour noise monitoring sites were also conducted to record day-night statistical noise level trends. The data collected included the hourly average ( $L_{eq}$ ), median ( $L_{50}$ ), and the maximum level ( $L_{max}$ ) during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 4.5-7 and Table 4.5-8. Figure 4.5-1 shows the locations of the noise monitoring sites.



**TABLE 4.5-7: EXISTING CONTINUOUS 24-HOUR AMBIENT NOISE MONITORING RESULTS**

SITE	LOCATION	L <sub>DN</sub> (DBA)	MEASURED HOURLY NOISE LEVELS, DBA LOW-HIGH (AVERAGE)					
			DAYTIME (7:00 AM - 10:00 PM)			NIGHTTIME (10:00 PM - 7:00 AM)		
			L <sub>EQ</sub>	L <sub>50</sub>	L <sub>MAX</sub>	L <sub>EQ</sub>	L <sub>50</sub>	L <sub>MAX</sub>
1	South of De Lima Road, west of I-5. 190' to centerline of I-5. Northbound lanes of I-5 shielded by roadway.	72	61-72 (66)	60-73 (64)	71-92 (76)	62-69 (66)	61-69 (65)	69-77 (72)
2	South of De Lima Road. West of I-5. 190' to centerline of I-5.	74	66-71 (69)	64-70 (68)	77-87 (81)	64-71 (68)	62-70 (66)	74-84 (78)
3	Princeville St. & Pinewood Dr. 200' to railroad centerline. Site not shielded by existing 8' tall sound wall.	64	50-64 (59)	46-55 (49)	67-83 (76)	50-62 (58)	48-56 (51)	65-83 (77)

SOURCE SAXELBY ACOUSTICS, 2018.

**TABLE 4.5-8: EXISTING SHORT-TERM COMMUNITY NOISE MONITORING RESULTS**

SITE	LOCATION	TIME <sup>1</sup>	MEASURED SOUND LEVEL, DB			NOTES
			L <sub>EQ</sub>	L <sub>50</sub>	L <sub>MAX</sub>	
1	Near Paradise Road & Old River	1:50 p.m.	48	44	65	Light breeze. Jet overflight.
2	Park at Huntington & Broadmoor	1:08 p.m.	42	40	52	Light breeze. Distant construction noise.
3	Near S. McKinley Ave. & Roth Rd.	3:54 p.m.	61	60	71	Pet food industrial. Truck brakes occasionally. Distant backup alarms. Traffic on Roth Rd.
4	Near 15820 Harlan Rd. 220' to I-5 centerline	3:01 p.m.	75	74	82	I-5 is dominant noise source.
5	Near W. Yosemite Ave. & ACE tracks	2:18 p.m.	70	66	81	RR at 150 ft. Traffic is primary noise source. Occasional trucks.

NOTE: <sup>1</sup> ALL COMMUNITY NOISE MEASUREMENT SITES HAVE TEST DURATIONS OF 10:00 MINUTES.

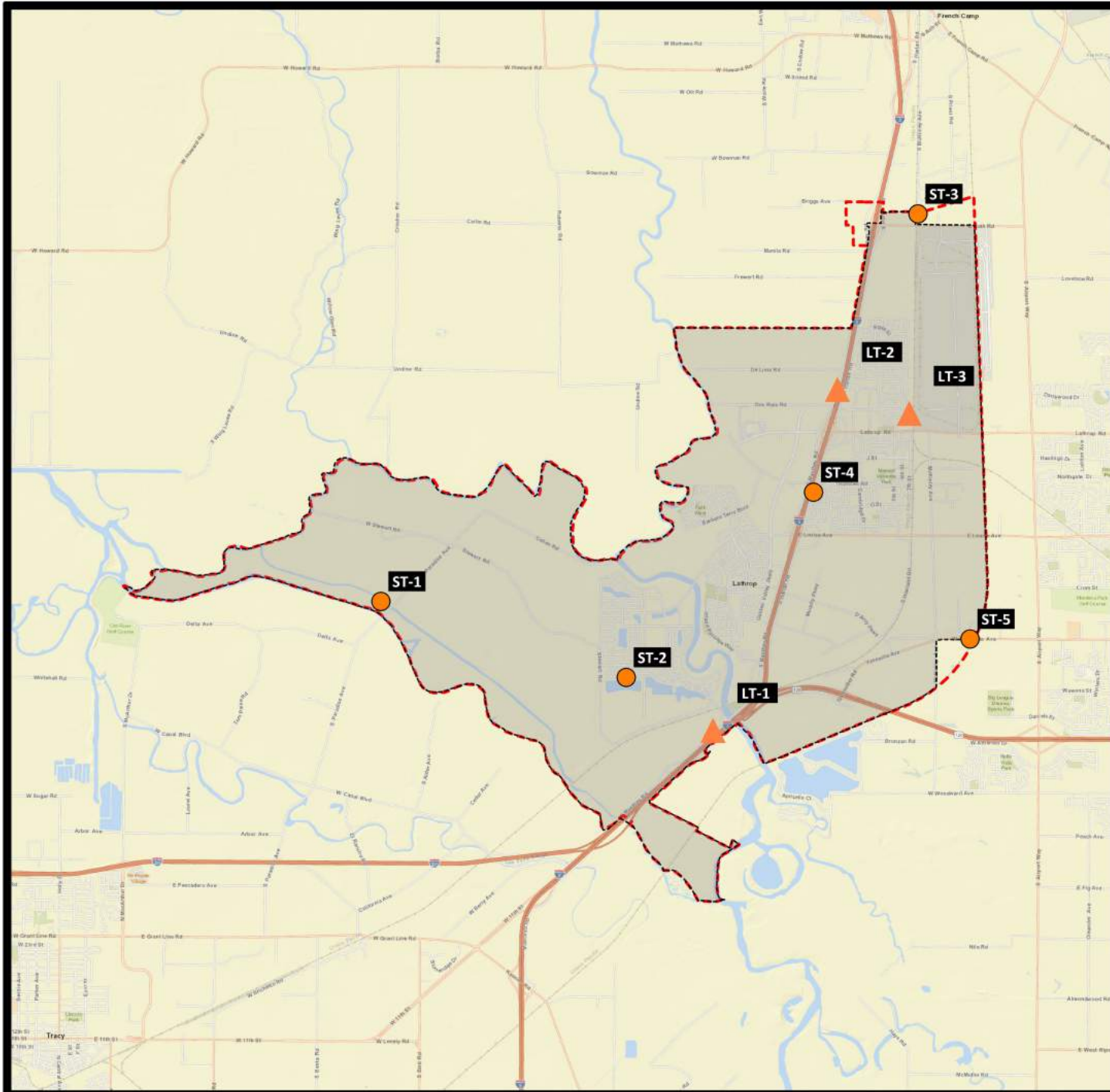
SOURCE SAXELBY ACOUSTICS, 2018.

The results of the community noise survey shown in Tables 4.5-7 and 4.5-8 indicate that existing transportation (traffic and railroad) noise sources were the primary contributors of noise observed in the City with commercial and industrial noise contributing to the ambient noise environment in some locations.

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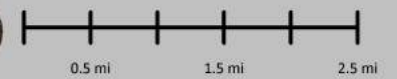
Lathrop General Plan Update  
City of Lathrop, California

Figure 3.11-1: Noise Measurement Sites



Legend

- Lathrop City Boundary
- Lathrop Sphere of Influence
- Noise Measurement - Long Term
- Noise Measurement - Short Term



Projection: State Plane (California Zone 3) / NAD83 / feet  
Rev. Date: 08/25/2018



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### 5.0 CONSERVATION AND NATURAL RESOURCES

The natural resources within the city and surrounding areas are an important part of the city's unique character and quality of life. In an effort to identify and understand the key natural resources of the city, this chapter is divided into the following sections:

- 5.1 Cultural and Historic Resources
- 5.2 Biological Resources
- 5.3 Air Quality
- 5.4 Greenhouse Gases and Climate Change
- 5.5 Geology, Soils and Seismicity
- 5.6 Mineral and Energy Resources
- 5.7 Hydrology and Water Quality
- 5.8 Scenic Resources
- 5.9 Agricultural Resources

### 5.1 CULTURAL AND HISTORIC RESOURCES

These resources are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. Preservation of the city's cultural heritage should be considered when planning for the future.

#### KEY TERMS

**Archaeology.** The study of historic or prehistoric peoples and their cultures by analysis of their artifacts and monuments.

**Complex.** A patterned grouping of similar artifact assemblages from two or more sites, presumed to represent an archaeological culture.

**Ethnography.** The study of contemporary human cultures.

**Midden.** A deposit marking a former habitation site and containing such materials as discarded artifacts, bone and shell fragments, food refuse, charcoal, ash, rock, human remains, structural remnants, and other cultural leavings.

**Paleontology.** The science of the forms of life existing in former geologic periods, as represented by their fossils.

#### REGULATORY SETTING

##### *FEDERAL*

##### **National Historic Preservation Act**

Most regulations at the Federal level stem from the National Environmental Policy Act (NEPA) and historic preservation legislation such as the National Historic Preservation Act (NHPA) of 1966, as amended. NHPA established guidelines to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of

## 5.0 CONSERVATION AND NATURAL RESOURCES

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individual choice." The NHPA includes regulations specifically for Federal land-holding agencies, but also includes regulations (Section 106) which pertain to all projects that are funded, permitted, or approved by any Federal agency and which have the potential to affect cultural resources. All projects that are subject to NEPA are also subject to compliance with Section 106 of the NHPA and NEPA requirements concerning cultural resources. Provisions of NHPA establish a National Register of Historic Places (The National Register) maintained by the National Park Service, the Advisory Councils on Historic Preservation, State Historic Preservation Offices, and grants-in-aid programs.

### **American Indian Religious Freedom Act and Native American Graves and Repatriation Act**

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

### **Other Federal Legislation**

Historic preservation legislation was initiated by the Antiquities Act of 1966, which aimed to protect important historic and archaeological sites. It established a system of permits for conducting archaeological studies on Federal land, as well as setting penalties for noncompliance. This permit process controls the disturbance of archaeological sites on Federal land. New permits are currently issued under the Archeological Resources Protection Act (ARPA) of 1979. The purpose of ARPA is to enhance preservation and protection of archaeological resources on public and Native American lands. The Historic Sites Act of 1935 declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance."

### *STATE*

### **California Register of Historic Resources (CRHR)**

California State law also provides for the protection of cultural resources by requiring evaluations of the significance of prehistoric and historic resources identified in documents prepared pursuant to the California Environmental Quality Act (CEQA). Under CEQA, a cultural resource is considered an important historical resource if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Criteria identified in the CEQA Guidelines are similar to those described under the NHPA. The State Historic Preservation Office (SHPO) maintains the CRHR. Historic properties listed, or formally designated for eligibility to be listed, on The National Register are automatically listed on the CRHR. State Landmarks and Points of Interest are also automatically listed. The CRHR can also include properties designated under local preservation ordinances or identified through local historical resource surveys.

### **California Environmental Quality Act (CEQA)**

CEQA requires that lead agencies determine whether projects may have a significant effect on archaeological and historical resources. This determination applies to those resources which meet significance criteria qualifying them as "unique," "important," listed on the California Register of Historic Resources (CRHR), or eligible for listing on the CRHR. If the agency determines that a project may have a significant effect on a significant resource, the project is determined to have a significant effect on the environment, and these effects must be addressed. If a cultural resource is found not to be significant under the qualifying criteria, it need not be considered further in the planning process.

CEQA emphasizes avoidance of archaeological and historical resources as the preferred means of reducing potential significant environmental effects resulting from projects. If avoidance is not feasible, an excavation program or some other form of mitigation must be developed to mitigate the impacts. In order to adequately address the level of potential impacts, and thereby design appropriate mitigation measures, the significance and nature of the cultural resources must be determined. The following are steps typically taken to assess and mitigate potential impacts to cultural resources for the purposes of CEQA:

- identify cultural resources,
- evaluate the significance of the cultural resources found,
- evaluate the effects of the project on cultural resources, and
- develop and implement measures to mitigate the effects of the project on cultural resources that would be significantly affected.

Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources in a project's area of potential affect, assessment of potential impacts on significant or unique resources, and development of mitigation measures for potentially significant impacts, which may include monitoring combined with data recovery and/or avoidance.

### **State Laws Pertaining to Human Remains**

Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission. CEQA Guidelines (Section 15064.5) specify the procedures to be followed in case of the discovery of human remains on non-Federal land. The disposition of Native American burials falls within the jurisdiction of the Native American Heritage Commission.

Several sections of the California Public Resources Code protect paleontological resources.

Section 5097.5 prohibits "knowing and willful" excavation, removal, destruction, injury, and defacement of any "vertebrate paleontological site, including fossilized footprints," on public lands, except where the agency with jurisdiction has granted express permission. "As used in this section, 'public lands' means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof."

California Public Resources Code, Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

The sections of the California Administrative Code relating to the State Division of Beaches and Parks afford protection to geologic features and "paleontological materials" but grant the director of the State park system authority to issue permits for specific activities that may result in damage to such resources, if the activities are in the interest of the State park system and for State park purposes (California Administrative Code, Title 14, Section 4307–4309).

### **Senate Bill 18 (Burton, Chapter 905, Statutes 2004)**

SB 18, authored by Senator John Burton and signed into law by Governor Arnold Schwarzenegger in September 2004, requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places ("cultural places") through local land use

## 5.0 CONSERVATION AND NATURAL RESOURCES

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planning. This legislation, which amended §65040.2, §65092, §65351, §65352, and §65560, and added §65352.3, §65352.4, and §65562.5 to the Government Code; also requires the Governor’s Office of Planning and Research (OPR) to include in the General Plan Guidelines advice to local governments on how to conduct these consultations. The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §65300 et seq.) and specific plans (defined in Government Code §65450 et seq.).

### **Assembly Bill 52 (Chapter 532, Statutes of 2014)**

Assembly Bill (“AB”) 52 establishes a formal consultation process for California tribes as part of CEQA and equates significant impacts on “tribal cultural resources” with significant environmental impacts (PRC Section 21084.2). AB 52 defines a “California Native American Tribe” as a Native American tribe located in California, and included on the contact list maintained by the Native American Heritage Commission. AB 52 requires formal consultation with California Native American Tribes prior to determining the level of environmental document if a tribe has requested to be informed by the lead agency of proposed projects. AB 52 also requires that the consultation address project alternatives and mitigation measures, for significant effects, if requested by the California Native American Tribe, and that consultation be considered concluded when either the parties agree to measures to mitigate or avoid a significant effect, or the agency concludes that mutual agreement cannot be reached.

#### *LOCAL*

### **City of Lathrop General Plan – Archaeological and Cultural Resource Policies:**

**Policy 7.3:** Significant natural open space and cultural resources should be identified prior to development and incorporated into site-specific development project design.

#### **Archaeological and Cultural Resource Policies:**

1. Existing known archaeological and cultural resources are to be protected, beginning with the filing of an application for development in the immediate vicinity of such resources. The City shall follow the procedures set forth in Appendix K, CEQA Guidelines. Confidentiality shall be maintained between the City and developer to avoid vandalism or desecration of such resources. Alternatives for development design intended to protect cultural resources shall be reviewed by a Native American having competence in understanding and interpreting the importance of the resources and of the most desirable methods to assure their preservation.
2. The potential loss as of yet unknown archaeological and cultural resources shall be avoided by close monitoring of the development process. The close proximity of properties intended for development to natural watercourses or to known archaeological or cultural resources shall be taken as a signal by the City and developer of a potential for unearthing unknown resources. In such cases, the City shall instruct the developers, construction foreman and City inspectors of the potential for damage to artifacts and sites, and provide written instructions requiring a halt to all excavation work in the event of any find until the significance of the find can be evaluated by competent archaeological and Native American specialists. The costs of such protective work shall be the responsibility of the developer.



### Chapter 17.38 Historic Lathrop Overlay District

The Historic Lathrop Residential Overlay district is intended for use in the historic Lathrop area. This district is intended:

- A. To prevent neighborhood deterioration in the R one-family existing subdivided lots;
- B. To create the opportunity for small lot subdivisions of parcels in the R one-family zone for affordable single-family housing;
- C. To create affordable attached and detached RM multifamily housing. (Ord. 05-252 § 1)

### ENVIRONMENTAL SETTING

Cultural resources are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. Preservation of the city's cultural heritage should be considered when planning for the future.

#### Prehistory

The Central Valley region was among the first in the state to attract intensive prehistorical fieldwork, and research has continued to the present day. This has resulted in a substantial accumulation of data.

In the early decades of the 1900s, E.J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W.E. Schenck (Schenck and Dawson 1929). By 1933, the focus of work was directed to the Cosumnes locality, where survey and excavation studies were conducted by the Sacramento Junior College (Lillard and Purves 1936). Excavation data, in particular from the stratified Windmill site (CA-Sac-107), suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento Junior College and the University of California, Berkeley, enabled the investigators to identify a third cultural tradition, intermediate between the previously postulated Early and Late Horizons. The three-horizon sequence, based on discrete changes in ornamental artifacts and mortuary practices, as well as on observed differences in soils within sites (Lillard, Heizer and Fenenga 1939), was later refined by Beardsley (1954). An expanded definition of artifacts diagnostic of each time period was developed, and its application extended to parts of the central California coast. Traits held in common allow the application of this system within certain limits of time and space to other areas of prehistoric central California.

The Windmill Culture (Early Horizon) is characterized by ventrally-extended burials (some dorsal extensions are known), with westerly orientation of heads; a high percentage of burials with grave goods; frequent presence of red ocher in graves; large projectile points, of which 60 percent are of materials other than obsidian; rectangular *Haliotis* beads; *Olivella* shell beads (types A1a and L); rare use of bone; some use of baked clay objects; and well-fashioned charmstones, usually perforated.

The Cosumnes Culture (Middle Horizon) displays considerable changes from the preceding cultural expression. The burial mode is predominately flexed, with variable cardinal orientation and some cremations present. There are a lower percentage of burials with grave goods, and ocher staining is common in graves. *Olivella* beads of types C1, F and G predominate, and there is abundant use of green *Haliotis* sp. rather than red *Haliotis* sp. Other characteristic artifacts include perforated and canid teeth; asymmetrical and "fishtail" charmstones, usually unperforated; cobble mortars and evidence of wooden

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mortars; extensive use of bone for tools and ornaments; large projectile points, with considerable use of rock other than obsidian; and use of baked clay.

Hotchkiss Culture (Late Horizon) -- The burial pattern retains the use of the flexed mode, and there is wide spread evidence of cremation, lesser use of red ocher, heavy use of baked clay, *Olivella* beads of Types E and M, extensive use of *Haliotis* ornaments of many elaborate shapes and forms, shaped mortars and cylindrical pestles, bird-bone tubes with elaborate geometric designs, clam shell disc beads, small projectile points indicative of the introduction of the bow and arrow, flanged tubular pipes of steatite and schist, and use of magnesite (Moratto 1984:181-183). The characteristics noted are not all-inclusive, but cover the more important traits.

Schulz (1981), in an extensive examination of the central California evidence for the use of acorns, used the terms Early, Middle and Late Complexes, but the traits attributed to them remain generally the same. While it is not altogether clear, Schulz seemingly uses the term "Complex" to refer to the particular archeological entities (above called "Horizons") as defined in this region. Ragir's (1972) cultures are the same as Schulz's complexes.

Bennyhoff and Hughes (1984) have presented alternative dating schemes for the Central California Archeological Sequence. The primary emphasis is a more elaborate division of the horizons to reflect what is seen as cultural/temporal changes within the three horizons and a compression of the temporal span.

There have been other chronologies proposed, including Fredrickson (1973), and since it is correlated with Bennyhoff's (1977) work, it does merit discussion. The particular archeological cultural entities Fredrickson has defined, based upon the work of Bennyhoff, are patterns, phases and aspects. Bennyhoff's (1977) work in the Plains Miwok area is the best definition of the Cosumnes District, which likely conforms to Fredrickson's pattern. Fredrickson also proposed periods of time associated heavily with economic modes, which provides a temporal term for comparing contemporary cultural entities. It corresponds with Willey and Phillips' (1958) earlier "tradition", although it is tied more specifically to the archeological record in California.

### **Ethnology**

The City of Lathrop General Plan Study Area lies within the northern portion of the ethnographic territory of the Yokuts people. The Yokuts were members of the Penutian language family which held all of the Central Valley, San Francisco Bay Area, and the Pacific Coast from Marin County to near Point Sur. The Yokuts differed from other ethnographic groups in California as they had true tribal divisions with group names (Kroeber 1925; Latta 1949). Each tribe spoke a particular dialect, common to its members, but similar enough to other Yokuts that they were mutually intelligible (Kroeber 1925).

The Yokuts held portions of the San Joaquin Valley from the Tehachapis in the south to Stockton in the north. On the north they were bordered by the Plains Miwok, and on the west by the Saclan or Bay Miwok and Costanoan peoples. Although neighbors were often from distinct language families, differences between the people appear to have been more influenced by environmental factors as opposed to linguistic affinities. Thus, the Plains Miwok were more similar to the nearby Yokuts than to foothill members of their own language group. Similarities in cultural inventory co-varied with distance from other groups and proximity to culturally diverse people. The material culture of the southern San Joaquin Yokuts was therefore more closely related to that of their non-Yokuts neighbors than to that of Delta members of their own language group.

Trade was well developed, with mutually beneficial interchange of needed or desired goods. Obsidian, rare in the San Joaquin Valley, was obtained by trade with Paiute and Shoshoni groups on the eastern side of the Sierra Nevada, where numerous sources of this material are located, and to some extent from the Napa Valley to the north. Shell beads, obtained by the Yokuts from coastal people, and acorns, rare in the Great Basin, were among many items exported to the east by Yokuts traders (Davis 1961).

Economic subsistence was based on the acorn, with substantial dependency on gathering and processing of wild seeds and other vegetable foods. The rivers, streams, and sloughs that formed a maze within the valley provided abundant food resources such as fish, shellfish, and turtles. Game, wild fowl, and small mammals were trapped and hunted to provide protein augmentation of the diet. In general, the eastern portion of the San Joaquin Valley provided a lush environment of varied food resources, with the estimated large population centers reflecting this abundance (Cook 1955; Baumhoff 1963).

Settlements were oriented along the water ways, with their village sites normally placed adjacent to these features for their nearby water and food resources. House structures varied in size and shape (Latta 1949; Kroeber 1925), with most constructed from the readily available tules found in the extensive marshes of the low-lying valley areas. The housepit depressions for the structures ranged in diameter from 3 meters to 18 meters (Wallace 1978:470).

### **Historic Period Background**

The northern section of the City of Lathrop on a portion of the Rancho Campo de los Franceses, the ranch named for the early camp first occupied by French-Canadian trappers employed by the Hudson's Bay Company in 1832. The site of the present-day location of French Camp was the terminus of the Oregon Trail used by the trappers between 1832 and 1845. In 1843, William Gulnac, likely one of the trappers who had become a Mexican citizen, with Charles Weber, later founder of Stockton, organized a company of 12 men for the purpose of forming a colony at French Camp. Gulnac filed for a land grant, and was awarded a large tract of land including French Camp and the later site of Stockton by the Mexican government.

Much of the remainder of the land is a portion of the El Pescadero land grant. The Mexican land grant of 35,546 acres, lying in portions of what is now San Joaquin and Alameda counties, was awarded in 1843 to Antonio Maria Pico. Pico sold one half of the property to Henry Morris Naglee in 1849. Pico sold one half of the remainder of the property in 1852 to John C. Frémont. After California became a state, a claim was filed for the grant in 1852 and rejected in 1854, but ultimately the land grant was patented to Pico and Naglee in 1865. The land grant was settled by numerous squatters, and Fremont sold his land to Charles McLaughlin in 1867.

Lathrop first was a station on the Central Pacific, established in 1869 when the last stretch of the transcontinental railroad was built from Sacramento through this region, and crossing the San Joaquin River at Mossdale to reach the Bay Area.

The site of Lathrop was first known as Wilson's Station, and included a store and a schoolhouse on land belonging to Thomas A. Wilson. Due to conflicts in the City of Stockton that infuriated Leland Stanford, the Central Pacific Railroad switched many operations to Wilson's Station, later re-named for Charles Lathrop, brother-in-law of Leland Stanford. The town drew significant commerce away for the City of Stockton. The railroad's machine shops and roundhouse were built here, and the town became an important division point and major stop on the railroad line beginning in 1871. The Visalia Division of the Stockton of the Southern Pacific Railroad was completed at that time, serving the San Joaquin Valley. Lathrop became an important shipping point for agricultural products.

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The early major building in Lathrop was the 1871 Central Pacific Railroad restaurant, serving passengers from trains from the Bay Area to Sacramento, and passengers travelling to the San Joaquin Valley. In 1889, in this restaurant, attorney David S. Terry was shot and killed by Field's bodyguard after he struck United States Supreme Court Justice Stephen Field.

Lathrop remained important for the railroads, and in 1890, had about 500 residents. Daily, there were twelve passenger and 44 freight trains passing through. But that changed in the early 1890s with the growth of Tracy, and the transfer of the machine shop and roundhouse to that community. The completion of the Western Pacific railroad in 1909 did not affect the town, with the local station located about ¾ miles from the town.

In 1942, the Lathrop Holding and Reconsignment Point was established in the Lathrop vicinity on what had been a sheep ranch, holding supplies for shipment through Bay Area ports. As many as 450 railroad cars would be loaded and unloaded each day.

The facility has gone through many changes with the changing needs of the military during times of conflict. After the end of World War II, the depot went through administrative and supply mission changes, a new name applied in 1948: Sharpe General Depot. The conflict in Korea brought a demand for increased services as the staffing, shipments and missions doubled during the three years of the war. The Army curtailed supply operations, and the Sharpe site began providing medical supplies and subsistence items on a larger scale. In 1962, the facility became the Sharpe Army Depot.

In 1965, with the escalation of the war in Vietnam, Sharpe became the major conduit for supplies moving to Southeast Asia. The Sharpe facility has continued to operate with a large part of the staffing switched to the Tracy facility beginning in 1999.

In the 1950s, several industrial plants were built in the Lathrop area, providing additional employment in the region. Beginning in the 1980s, improvements to community infrastructure and the attractive pricing of homes brought even more growth. The pattern of rapid growth continues to this day, with industrial and commercial development in the area, as well as many residents commuting daily to the Bay Area. The City of Lathrop incorporated in 1989.

### Cultural Resources

One hundred and seventy-two cultural resources have been identified within the City of Lathrop General Plan Study Area, according to files maintained by the Central California Information Center (CCIC) of the California Historical Resources Information System (CHRIS). The one hundred and seventy-two recorded cultural resources span both the prehistoric and historic periods and range from a Native American village site to historic period railroads, a school, buildings and single-family homes (see Table 5.1.1). The recorded resources include a Point of Historical Interest and two California Historical Landmarks. The greatest number of recorded cultural resources are buildings at the Sharpe facility.

**TABLE 5.1-1: RESOURCES LISTED WITH THE CENTRAL CALIFORNIA INFORMATION CENTER FILE DIRECTORY**

<i>PROPERTY #</i>	<i>ADDRESS</i>	<i>PERIOD/TYPE</i>	<i>NAME</i>
P-39-000002 (CA-SJO-250H)	Not Listed	Historic/ Railroad	Southern Pacific Railroad in San Joaquin County
P-39-000007 (CA-SJO-255)	Not Listed	Prehistoric/ Artifact scatter	Not Listed
P-39-000008	Not Listed	Historic/ Object	Not Listed
P-39-000009	Not Listed	Prehistoric/	Not Listed

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<i>PROPERTY #</i>	<i>ADDRESS</i>	<i>PERIOD/TYPE</i>	<i>NAME</i>
		Isolated Artifact	
P-39-000010	Not Listed	Prehistoric/ Isolated Artifact	Not Listed
P-39-000011	Not Listed	Prehistoric/ Isolated Artifact	Not Listed
P-39-000012	Not Listed	Prehistoric/ Isolated Artifact	Not Listed
P-39-000013	Not Listed	Historic/ Farm Equipment	Not Listed
P-39-000014 (CA-SJO-19/H)	Not Listed	Prehistoric/ Village Historic/ Single Family Residence	18880 South Quierolo Road
P-39-000098 (CA-SJO-292H)	Not Listed	Historic/ Railroad	Western Pacific Railroad / Union Pacific Railroad
P-39-000130	Not Listed	Historic/ Building	Flammable Materials Storehouse (Building Number 39)
P-39-000131	Not Listed	Historic/ Building	Flammable Materials House Building (Building Number 40)
P-39-000132	Not Listed	Historic/ Building	Lumber Shed (Building Number 45)
P-39-000133	Not Listed	Historic/ Railroad, Buildings	Sharpe Facility Railroad System (Structures Number 101, 273, 573 and remaining rail lines)
P-39-000134	Not Listed	Historic/ Building	Water Supply/Treatment Building Number 121
P-39-000135	Not Listed	Historic/ Building	Water Pumphouses (Buildings Number 124, 137, 145)
P-39-000136	Not Listed	Historic/ Building	Sewage Pump Station (Building Number 313)
P-39-000137	Not Listed	Historic/ Building	Storm Water Pump Station (Building Number 442)
P-39-000138	Not Listed	Historic/ Building	Flammable Materials Storehouse (Building Number 691)
P-39-000141 (CA-SJO-3)	Not Listed	Prehistoric/ Village	Mossdale Wye
P-39-000517 (POI-SJO-006)	Not Listed	Historic/ Building	Eldon H. Gordon House
P-39-000531 (CHL-437)	Not Listed	Historic/ Site	First Landing Place of Sailing Launch "Comet"
P-39-000538 (CHL-780-7)	Not Listed	Historic/ Railroad Bridge	Union Pacific Railroad Bridge
P-39-000573	Not Listed	Historic/ Building	Auto Garage Building Number 116
P-39-000574	Not Listed	Historic/ Building	Fire Station Building Number 135
P-39-000575	Not Listed	Historic/ Building	Skill Development Center Building Number 161
P-39-000576	Not Listed	Historic/ Building	Motor Repair Shop Building Number 171
P-39-000577	Not Listed	Historic/ Building	Maintenance Shop Building Number 179
P-39-000578	Not Listed	Historic/ Building	Administration Building Number 108
P-39-000579	Not Listed	Historic/ Building	Administration Building Number 290

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<i>PROPERTY #</i>	<i>ADDRESS</i>	<i>PERIOD/TYPE</i>	<i>NAME</i>
P-39-000580	Not Listed	Historic/ Building	Motor Repair Shop Building Number 227
P-39-000581	Not Listed	Historic/ Building	Building 208
P-39-000582	Not Listed	Historic/ Building	Post Building Number 458
P-39-000583	Not Listed	Historic/ Building	Warehouse Building Number 404
P-39-000584	Not Listed	Historic/ Building	Aircraft Hanger Building Number 585
P-39-000585	Not Listed	Historic/ Building	Building Number 661
P-39-000586	Not Listed	Historic/ Building	FE Maintenance Shop Building Number 48
P-39-000587	Not Listed	Historic/ Building	Sewage Treatment Plant Building Number 307
P-39-000588	Not Listed	Historic/ Building	Police Administration Building Number 6
P-39-000589	Not Listed	Historic/ Building	Post Headquarters Building Number 1
P-39-000590	Not Listed	Historic/ Building	FE Facility Building Number 42
P-39-000591	Not Listed	Historic/ Building	General Storehouse Building Number 44
P-39-000592	Not Listed	Historic/ Building	FE Facility Building Number 41
P-39-000593	Not Listed	Historic/ Building	Warehouse Building Number 67
P-39-000594	Not Listed	Historic/ Building	Vehicle Storage Building Number 50
P-39-000595	Not Listed	Historic/ Building	Building Number 100
P-39-000596	Not Listed	Historic/ Building	Building Number 10
P-39-000597	Not Listed	Historic/ Building	Community Center Building Number 25
P-39-000598	Not Listed	Historic/ Building	Warehouse Building Number 640
P-39-000599	Not Listed	Historic/ Building	Administration Building Number 211
P-39-000600	Not Listed	Historic/ Building	Warehouse Building Number 486
P-39-000601	Not Listed	Historic/ Building	Building Number 648
P-39-000602	Not Listed	Historic/ Building	NCO Housing Building Number 27
P-39-000603	Not Listed	Historic/ Building	Housing Building Number 26
P-39-000604	Not Listed	Historic/ Building	Signal Field Maintenance Building Number 684
P-39-000605	Not Listed	Historic/ Building	Railroad Equipment Maintenance Building Number 101
P-39-000606	Not Listed	Historic/ Building	Civilian Personnel Building Number 3
P-39-000607	Not Listed	Historic/ Building	Dispensary Building Number 7
P-39-000608	Not Listed	Historic/ Building	Post Chapel Building Number 11

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<i>PROPERTY #</i>	<i>ADDRESS</i>	<i>PERIOD/TYPE</i>	<i>NAME</i>
P-39-000609	Not Listed	Historic/ Building	Enlisted Men's Barracks
P-39-000610	Not Listed	Historic/ Buildings	Quinones AFRC Buildings Numbers 75 and 76
P-39-000611	Not Listed	Historic/ Building	Building Number 655
P-39-000612	Not Listed	Historic/ District	Sharpe Army Depot, California
P-39-000616	Not Listed	Historic/ Building	Care and Preservation Building Number 649
P-39-004234 (CA-SJO-274H)	Not Listed	Historic/ Concrete Pylons	MD-1 / The Pylon Site
P-39-004235	Not Listed	Prehistoric/ Isolated Artifact	Iso-1
P-39-004333 (CA-SJO-280)	Not Listed	Prehistoric/ Village	River Islands Site 1
P-39-004334	Not Listed	Historic/ Railroad Bridge	Union Pacific Railroad Bridge
P-39-004335	Not Listed	Prehistoric/ Isolated Artifact	River Islands Isolate 1
P-39-004336	Not Listed	Prehistoric/ Isolated Artifact	River Islands Isolate 2
P-39-004339 (CA-SJO-300H)	Not Listed	Historic/ Refuse Scatter	Moss-1
P-39-004340 (CA-SJO-281H)	Not Listed	Historic/ Buildings, Refuse Scatter	Moss-2
P-39-004341	Not Listed	Prehistoric/ Isolated Artifact	Moss Isolate 1
P-39-004342	Not Listed	Historic/ Isolated Artifact	Moss Isolate 2
P-39-004343	Not Listed	Historic/ Isolated Artifact	Moss Isolate 3
P-39-004344	Not Listed	Historic/ Pump	Moss Isolate 4
P-39-004345	Not Listed	Prehistoric/ Isolated Artifact	Moss Isolate 5
P-39-004346	Not Listed	Historic/ Isolated Artifact	Moss Isolate 6
P-39-004347	Not Listed	Prehistoric/ Isolated Artifact	Moss Isolate 7
P-39-004357	Not Listed	Historic/ Bridge	San Joaquin River Mossdale Bridge 29C-127
P-39-004504	Not Listed	Historic/ Farm Complex	Armstrong #1
P-39-004510	Not Listed	Historic/ Bridge	W 120-S5 Connector OH Bridge 29-0016F
P-39-004547 (CA-SJO-304H)	Not Listed	Historic/ Single Family Residence	EC-06-02
P-39-004548 (CA-SJO-395H)	Not Listed	Historic/ Buildings	EC-06-03
P-39-004549	Not Listed	Historic/ Brick Wall Fragment	IO-1
P-39-004562	Not Listed	Historic/ Building	Building 51
P-39-004563	Not Listed	Historic/	Union Office (AFGE Local 145)

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<i>PROPERTY #</i>	<i>ADDRESS</i>	<i>PERIOD/TYPE</i>	<i>NAME</i>
		Building	Building Number 110
P-39-004564	Not Listed	Historic/ Structure	Water Reservoir 500,00 gallons Building Number 123
P-39-004565	Not Listed	Historic/ Structure	Elevated Water Tank Building Number 131
P-39-004566	Not Listed	Historic/ Building	Storage Building Number 178
P-39-004567	Not Listed	Historic/ Building	Maintenance Shop, General Purpose Building Number 179
P-39-004568	Not Listed	Historic/ Building	Sewage Pump Building Number 215
P-39-004569	Not Listed	Historic/ Building	DLA Quality Assurance Facility/Warehouse Building Number 404
P-39-004570	Not Listed	Historic/ Building	Storage Building Number 412
P-39-004571	Not Listed	Historic/ Building	Sewage Pump Building Number 413
P-39-004572	Not Listed	Historic/ Building	Sewage Pump Building Number 650
P-39-004573	Not Listed	Historic/ Building	Care and Preservation Shop Building Number 653
P-39-004574	Not Listed	Historic/ Building	Compressor Building Number 666
P-39-004597	Not Listed	Historic/ Building	Paint Shop Building Number 53
P-39-004602	Not Listed	Historic/ Building	Silveria Complex
P-39-004603 (CA-SJO-313H)	Not Listed	Historic/ Refuse Scatter	EC-06-52
P-39-004604 (CA-SJO-314H)	Not Listed	Historic/ Water Conveyance System	EC-06-53
P-39-004605	Not Listed	Prehistoric/ Isolated Artifact	South Lathrop, South Village, Iso 1
P-39-004606	Not Listed	Prehistoric/ Isolated Artifact	South Lathrop, South Village, Iso 2
P-39-004607	Not Listed	Prehistoric/ Isolated Artifact	South Lathrop, South Village, Iso 3
P-39-004608	Not Listed	Prehistoric/ Isolated Artifact	South Lathrop, South Village, Iso 4
P-39-004609	Not Listed	Historic/ Water Trough	South Lathrop, South Village, Iso 5
P-39-004610	Not Listed	Historic/ Water Pump	South Lathrop, South Village, Iso 6
P-39-004611	Not Listed	Historic/ Building	EC-06-21
P-39-004612	Not Listed	Historic/ Building	EC-06-30
P-39-004613	Not Listed	Historic/ Building	EC-06-31
P-39-004614	Not Listed	Historic/ Building	EC-06-32
P-39-004615	Not Listed	Historic/ Building	EC-06-34



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<i>PROPERTY #</i>	<i>ADDRESS</i>	<i>PERIOD/TYPE</i>	<i>NAME</i>
P-39-004616	Not Listed	Historic/ Building	EC-06-35
P-39-004617	Not Listed	Historic/ Building	EC-06-36
P-39-004618	Not Listed	Historic/ Building	EC-06-37
P-39-004619	Not Listed	Historic/ Building	EC-06-38
P-39-004620	Not Listed	Historic/ Building	EC-06-39
P-39-004621	Not Listed	Historic/ Building	EC-06-40
P-39-004622	Not Listed	Historic/ Building	EC-06-41
P-39-004623	Not Listed	Historic/ Building	EC-06-42
P-39-004624	Not Listed	Historic/ Building	EC-06-43
P-39-004625	Not Listed	Historic/ Building	EC-06-44
P-39-004626	Not Listed	Historic/ Building	EC-06-45
P-39-004627	Not Listed	Historic/ Building	EC-06-46
P-39-004628	Not Listed	Historic/ Building	EC-06-47
P-39-004629	Not Listed	Historic/ Building	EC-06-48
P-39-004630	Not Listed	Historic/ Building	EC-06-49
P-39-004631	Not Listed	Historic/ Building	EC-06-50
P-39-004632	Not Listed	Historic/ Building	EC-06-51
P-39-004633	Not Listed	Historic/ Building	EC-06-54
P-39-004634	Not Listed	Historic/ Building	EC-06-55
P-39-004635	Not Listed	Historic/ Building	EC-06-56
P-39-004636	Not Listed	Historic/ Building	EC-06-57
P-39-004637	Not Listed	Historic/ Building	EC-06-58
P-39-004638	Not Listed	Historic/ Building	EC-06-59
P-39-004688	5600 West Stewart Road	Historic/ Buildings	R1-1H
P-39-004649	5100 West Stewart Road	Historic/ Single Family Residence, Sheds	R1-2H
P-39-004650	5100 West Stewart Road	Historic/ Single Family Residence, Shed	R1-3H
P-39-004651	4200 West Stewart Road	Historic/ Outbuilding, Cattle Chute	R1-4H

## 5.0 CONSERVATION AND NATURAL RESOURCES

<i>PROPERTY #</i>	<i>ADDRESS</i>	<i>PERIOD/TYPE</i>	<i>NAME</i>
P-39-004652	16426 Cohen Road	Historic/ Single Family Residence, Sheds	R1-6H
P-39-004653	16777 South Cohen Road	Historic/ Single Family Residence, Shed	R1-7H
P-39-004654	1710 Stewart Road	Historic/ Single Family Residence, Sheds	R1-8H
P-39-004655	1417 Stewart Road	Historic/ Single Family Residence, Sheds	R1-9H
P-39-004656	Not Listed	Historic/ Silos	R1-10H
P-39-004657	454 West Stewart Road	Historic/ Sheds	R1-11H
P-39-004658	Not Listed	Historic/ Silos	R1-12H
P-39-004659	294 West Stewart Road	Historic/ Single Family Residence, Sheds	R1-14H
P-39-004660	301 West Stewart Road	Historic/ Single Family Residence, Garage	R1-15H
P-39-004661	Not Listed	Water Conveyance Features (Canals)	R1-16H to 32H
P-39-004857	Not Listed	Historic/ Structure	Old River Levees
P-39-005029	Not Listed	Historic/ Building	Bachelor Officers Quarters Building Number 4
P-39-005045	Not Listed	Historic/ School	Mossdale Middle School, Moulder, Mt. Carmel School
P-39-005084	Not Listed	Historic/ Levee	Paradise Cut Levee
P-39-005085	Not Listed	Historic/ Levee	San Joaquin River Levee
P-39-005086	Not Listed	Historic/ Levee	RD 17 West Levee, Walthall Slough Dry Land Levee
P-39-005096	Not Listed	Historic/ School	Lathrop School
P-39-005108	Not Listed	Historic/ Structure	Paved Open Storage, Former Fixed-Wing Aircraft Runway and Aircraft Holding Apron Buildings Number 595/597
P-39-005140	Not Listed	Historic/ Building	Industrial Waste Treatment Building Number 306
P-39-005227 (CA-SJO-355H)	Not Listed	Historic/ Water Conveyance Feature (Ditch)	AW-1
P-39-005249	Not Listed	Historic/	Building Number 26

## 5.0 CONSERVATION AND NATURAL RESOURCES

<i>PROPERTY #</i>	<i>ADDRESS</i>	<i>PERIOD/TYPE</i>	<i>NAME</i>
		Building	
P-39-005251	Not Listed	Historic/ Building	Building Number 21
P-39-005252	Not Listed	Historic/ Building	Building Number 29
P-39-005253	Not Listed	Historic/ Building	Building Number 32
P-39-005254	Not Listed	Historic/ Building	Building Number 28
P-39-005255	Not Listed	Historic/ Building	Building Number 30
P-39-005256	Not Listed	Historic/ Building	Building Number 31
P-39-005257	Not Listed	Historic/ Building	Building Number 33
P-39-005258	Not Listed	Historic/ Building	Building Number 34
P-39-005259	Not Listed	Prehistoric/ Isolated Artifacts	Prehistoric Artifacts
P-39-005260	Not Listed	Historic/ Foundation	Feature SD-1

*SOURCE: CENTRAL CALIFORNIA INFORMATION CENTER (CCIC) OF THE CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM (CHRIS)*

There are no properties or districts currently listed on the National Register of Historic Places or California Register of Historic Places for the City of Lathrop Study Area ([www.nationalregisterofhistoricplaces.com](http://www.nationalregisterofhistoricplaces.com)).

### Consultation

Letters were sent to: The Native American Heritage Commission (NAHC); Mr. Randy Yonemura, Lone Band of Miwok Indians; Ms. Katherine Erolinda Perez, Northern Valley Yokuts Tribe; Mr. Gene Whitehouse, Chairman, United Auburn Indian Community of the Auburn Rancheria; Ms. Rhonda Morningstar Pope, Chairperson, Buena Vista Rancheria of Me-Wuk Indians; Ms. Crystal Martinez, Chairperson, Lone Band of Miwok Indians; Ms. Lois Martinez, Chairperson, Southern Sierra Miwuk Nation; Mr. Raymond Hitchcock, Chairperson, Wilton Rancheria; and, California Valley Miwok Tribe. The Native American Heritage Commission responded with a letter dated December 14, 2017. The NAHC letter stated that a record search of the NAHC Sacred Lands File was completed for the area of potential project effect (APE) with negative results, and notes that the absence of specific site information in the Sacred Lands File does not indicate the absence of Native American cultural resources in any APE.

### Paleontological Resources

Among the natural resources deserving conservation and preservation, and existing within the update Study Area, are the often-unseen records of past life buried in the sediments and rocks below the pavement, buildings, soils, and vegetation which now cover most of the area. Fossils constitute a non-renewable resource: Once lost or destroyed, the exact information they contained can never be reproduced.

Paleontology is the science that attempts to unravel the meaning of these fossils in terms of the organisms they represent, the ages and geographic distribution of those organisms, how they interacted in ancient ecosystems and responded to past climatic changes, and the changes through time of all of these aspects.

The sensitivity of a given area or body of sediment with respect to paleontological resources is a function of both the potential for the existence of fossils and the predicted significance of any fossils which may be

## 5.0 CONSERVATION AND NATURAL RESOURCES

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found there. The primary consideration in the determination of paleontological sensitivity of a given area, body of sediment, or rock formation is its potential to include fossils. Information that can contribute to assessment of this potential includes: 1) direct observation of fossils within the project area; 2) the existence of known fossil localities or documented absence of fossils in the same geologic unit (e.g., "Formation" or one of its subunits); 3) descriptive nature of sedimentary deposits (such as size of included particles or clasts, color, and bedding type) in the area of interest compared with those of similar deposits known elsewhere to favor or disfavor inclusion of fossils; and 4) interpretation of sediment details and known geologic history of the sedimentary body of interest in terms of the ancient environments in which they were deposited, followed by assessment of the favorability of those environments for the preservation of fossils.

The most general paleontological information can be obtained from geologic maps, but geologic cross sections (slices of the layer cake to view the third dimension) must be reviewed for each area in question. These usually accompany geologic maps or technical reports. Once it can be determined which formations may be present in the subsurface, the question of paleontological resources must be addressed. Even though a formation is known to contain fossils, they are not usually distributed uniformly throughout the many square miles the formation may cover. If the fossils were part of a bay environment when they died, perhaps a scattered layer of shells will be preserved over large areas. If on the other hand, a whale died in this bay, you might expect to find fossil whalebone only in one small area of less than a few hundred square feet. Other resources to be considered in the determination of paleontological potential are regional geologic reports, site records on file with paleontological repositories and site-specific field surveys. A search of the University of California Museum of Paleontology (UCMP) collections database identified 984 paleontological resources in San Joaquin County. These paleontological resources consist of 756 vertebrates 211 microfossils, and 17 invertebrate fossils.

Generally, Paleontologists consider all vertebrate fossils to be of the greatest significance. Fossils of other types are considered significant if they represent a new record, new species, an oldest occurring species, the most complete specimen of its kind, a rare species worldwide, or a species helpful in the dating of formations.

Much of the area west of the San Joaquin River within the Planning Area is underlain by younger Holocene-age sediments (Holocene alluvial floodplain deposits), which due to their recent age structure are considered to have a low potential (low sensitivity) rating for containing significant paleontological resources. However, even a designated low potential site may yield fossils as sedimentary deposits associated with the Pleistocene Modesto Formation (generally located east of the San Joaquin River within the Planning Area) could also underlie alluvial floodplain deposits at certain depths.

A portion of the Planning Area is located within sediments of the Modesto Formation, which is considered a paleontologically sensitive rock unit under the Society of Vertebrate Paleontology guidelines (1995, 1996). In addition, the occurrence of Pleistocene vertebrate fossil remains in sediments referable to the Modesto Formation from the nearby cities of Manteca, Stockton, and Tracy suggests that the potential exists for uncovering additional similar fossil remains during construction related earth-moving activities in the Planning Area.

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## 5.2 BIOLOGICAL RESOURCES

This section describes biological resources in the Planning Area from both a qualitative and quantitative perspective. The results of this assessment may be used in planning and management decisions that may affect biological resources in the Planning Area.

### KEY TERMS

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The following key terms are used throughout this section to describe biological resources and the framework that regulates them:

**Hydric Soils.** One of the three wetland identification parameters, according to the Federal definition of a wetland, hydric soils have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season. There are approximately 2,000 named soils in the United States that may occur in wetlands.

**Hydrophytic Vegetation.** Plant types that typically occur in wetland areas. Nearly 5,000 plant types in the United States may occur in wetlands. Plants are listed in regional publications of the U.S. Fish and Wildlife Service (USFWS) and include such species as cattails, bulrushes, cordgrass, sphagnum moss, bald cypress, willows, mangroves, sedges, rushes, arrowheads, and water plantains.

**Sensitive Natural Community.** A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, is structurally complex, or is in other ways of special concern to local, State, or Federal agencies. CEQA identifies the elimination or substantial degradation of such communities as a significant impact. The California Department of Fish and Wildlife (CDFW) tracks sensitive natural communities in the California Natural Diversity Database (CNDDB).

**Special-Status Species.** Special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by Federal, State, or other agencies. Some of these species receive specific protection that is defined by Federal or State endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of State resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special status species" in this report, following a convention that has developed in practice but has no official sanction. For the purposes of this assessment, the term "special status" includes those species that are:

- Federally listed or proposed for listing under the Federal Endangered Species Act (50 CFR 17.11-17.12);
- Candidates for listing under the Federal Endangered Species Act (61 FR 7596-7613);
- State listed or proposed for listing under the California Endangered Species Act (14 CCR 670.5);
- Species listed by the U.S. Fish and Wildlife Service (USFWS) or the CDFW as a species of concern (USFWS), rare (CDFW), or of special concern (CDFW);
- Fully protected animals, as defined by the State of California (California Fish and Game Code Section 3511, 4700, and 5050);
- Species that meet the definition of threatened, endangered, or rare under CEQA (CEQA Guidelines Section 15380);

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- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.); and
- Plants listed by the California Native Plant Society (CNPS) as rare, threatened, or endangered (List 1A and List 2 status plants in Skinner and Pavlik 1994).

**Waters of the U.S.** The Federal government defines waters of the U.S. as "lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows" [33 C.F.R. §328.3(a)]. Waters of the U.S. exhibit a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the USACE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. §328.3(e)].

**Wetlands.** Wetlands are ecologically complex habitats that support a variety of both plant and animal life. The Federal government defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. §328.3(b)]. Wetlands require wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to waters of the U.S.

### REGULATORY FRAMEWORK

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There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the State and nation including the California Department of Fish and Wildlife (CDFW), the U.S. Fish and Wildlife Service (USFWS), the U.S. Army Corps of Engineers (USACE), and the National Marine Fisheries Service (NMFS). These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. The following is an overview of the Federal, State, and local regulations that are applicable to implementing the General Plan.

#### *FEDERAL*

#### **Federal Endangered Species Act**

The Federal Endangered Species Act, passed in 1973, defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Once a species is listed it is fully protected from a "take" unless a take permit is issued by the United States Fish and Wildlife Service. A take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct, including modification of its habitat (16 USC 1532, 50 CFR 17.3). Proposed endangered or threatened species are those species for which a proposed regulation, but not a final rule, has been published in the Federal Register.

#### **Migratory Bird Treaty Act**

To kill, possess, or trade a migratory bird, bird part, nest, or egg is a violation of the Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., §703, Supp. I, 1989), unless it is in accordance with the regulations that have been set forth by the Secretary of the Interior.



### **Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (16 USC Section 668) protects these birds from direct take and prohibits the take or commerce of any part of these species. The USFWS administers the act, and reviews Federal agency actions that may affect these species.

### **Clean Water Act – Section 404**

Section 404 of the Clean Water Act (CWA) regulates all discharges of dredged or fill material into waters of the U.S. Discharges of fill material includes the placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §323.2(f)].

Waters of the U.S. include lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows [33 C.F.R. §328.3(a)]. Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” [33 C.F.R. §328.3(b)]. Waters of the U.S. exhibit a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the USACE as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” [33 C.F.R. §328.3(e)].

The USACE is the agency responsible for administering the permit process for activities that affect waters of the U.S. Executive Order 11990 is a Federal implementation policy, which is intended to result in no net loss of wetlands.

### **Clean Water Act – Section 401**

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant who is seeking a 404 permit to first obtain a water quality certification from the Regional Water Quality Control Board. To obtain the water quality certification, the Regional Water Quality Control Board must indicate that the proposed fill would be consistent with the standards set forth by the State.

### **Department of Transportation Act - Section 4(f)**

Section 4(f) has been part of Federal law since 1966. It was enacted as Section 4(f) of the Department of Transportation (DOT) Act of 1966 and set forth in Title 49 United States Code (U.S.C.), Section 1653(f). In January 1983, as part of an overall recodification of the DOT Act, Section 4(f) was amended and codified in 49 U.S.C. Section 303. This law established policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites as follows:

*It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities. The Secretary of Transportation may approve a transportation program or project (other than any project for a park road or parkway under section 204 of title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local*

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*significance, or land of a historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if: a) There is no prudent and feasible alternative to using that land; and b) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.*

### **Rivers and Harbors Act of 1899**

The Rivers and Harbors Act prohibits the obstruction or alteration of any navigable water of the United States. The Act requires authorization from the USACE for any excavation or deposition of materials into these waters or for any work that could affect the course, location, condition, or capacity of rivers or harbors.

*STATE*

### **Fish and Game Code §2050-2097 - California Endangered Species Act**

The California Endangered Species Act (CESA) protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

CESA was expanded upon the original Native Plant Protection Act and enhanced legal protection for plants. To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Game Commission.

### **Fish and Game Code §1900-1913 California Native Plant Protection Act**

In 1977, the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the State. The intent of the law was to preserve, protect, and enhance endangered plants. The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as "rare" from the wild, and a salvage mandate for landowners, which requires notification of the CDFW 10 days in advance of approving a building site.

### **Fish and Game Code §3503, 3503.5, 3800 - Predatory Birds**

Under the California Fish and Game Code, all predatory birds in the order Falconiformes or Strigiformes in California, generally called "raptors," are protected. The law indicates that it is unlawful to take, possess, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

### **Fish and Game Code §1601-1603 – Streambed Alteration**

Under the California Fish and Game Code, CDFW has jurisdiction over any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. Private landowners or project proponents must obtain a "Streambed Alteration Agreement" from CDFW prior to

any alteration of a lake bed, stream channel, or their banks. Through this agreement, the CDFW may impose conditions to limit and fully mitigate impacts on fish and wildlife resources. These agreements are usually initiated through the local CDFW warden and will specify timing and construction conditions, including any mitigation necessary to protect fish and wildlife from impacts of the work.

### **Public Resources Code § 21000 - California Environmental Quality Act**

The California Environmental Quality Act (CEQA) identifies that a species that is not listed on the Federal or State endangered species list may be considered rare or endangered if the species meets certain criteria. Under CEQA public agencies must determine if a project would adversely affect a species that is not protected by FESA or CESA. Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e., candidate or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of “Species of Special Concern,” developed by the CDFW. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere. List 3 contains plants where additional information is needed. List 4 contains plants with a limited distribution.

### **Public Resources Code § 21083.4 - Oak woodlands conservation**

In 2004, the California legislature enacted SB 1334, which added oak woodland conservation regulations to the Public Resources Code. This new law requires a county to determine whether a project, within its jurisdiction, may result in a conversion of oak woodlands that will have a significant effect on the environment. If a county determines that there may be a significant effect to oak woodlands, the county must require oak woodland mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands. Such mitigation alternatives include: conservation through the use of conservation easements; planting and maintaining an appropriate number of replacement trees; contribution of funds to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements; and/or other mitigation measures developed by the county.

### **California Oak Woodland Conservation Act**

The California Legislature passed Assembly Bill 242, known as the California Oak Woodland Conservation Act, in 2001 as a result of widespread changes in land use patterns across the landscape that were fragmenting oak woodland character over extensive areas. The Act created the California Oak Woodland Conservation Program within the Wildlife Conservation Board. The legislation provides funding and incentives to ensure the future viability of California’s oak woodland resources by maintaining large scale land holdings or smaller multiple holdings that are not divided into fragmented, nonfunctioning biological units. The Act acknowledged that the conservation of oak woodlands enhances the natural scenic beauty for residents and visitors, increases real property values, promotes ecological balance, provides habitat for over 300 wildlife species, moderates temperature extremes, reduces soil erosion, sustains water quality, and aids with nutrient cycling, all of which affect and improve the health, safety, and general welfare of the residents of the State.

### **California Wetlands Conservation Policy**

In August 1993, the Governor announced the "California Wetlands Conservation Policy." The goals of the policy are to establish a framework and strategy that will:

- Ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.
- Reduce procedural complexity in the administration of State and Federal wetland conservation programs.
- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporates the goals and objectives contained in the new policy and directs the Resources Agency to establish an Interagency Task Force to direct and coordinate administration and implementation of the policy.

### **Natural Community Conservation Planning Act**

The Natural Community Conservation Planning Act provides long-term protection of species and habitats through regional, multi-species planning before the special measures of the CESA become necessary.

### **Porter-Cologne Water Quality Control Act**

The Porter-Cologne Water Quality Control Act authorizes the SWRCB to regulate state water quality and protect beneficial uses.

### **Water Quality Control Plan for the Sacramento-San Joaquin River Basins**

The Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan), adopted by the CVRWQCB in 1998, identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and SJR basins, including the Delta.

State and federal laws mandate the protection of designated "beneficial uses" of water bodies. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050[f]). Additional protected beneficial uses of the SJR include groundwater recharge and fresh water replenishment.

#### *LOCAL*

### **San Joaquin County Multi-Species Habitat Conservation and Open Space Plan**

A Habitat Conservation Plan (HCP) is a federal planning document that is prepared pursuant to Section 10 of the FESA. An approved HCP within a defined plan area allows for the incidental take of species and habitat that are otherwise protected under FESA during development activities.

A Natural Community Conservation Plan (NCCP) is a state planning document administered by CDFW. An approved NCCP within a defined plan area allows for the incidental take of species and habitat that are otherwise protected under CESA during growth and development activities.

*Background:* The key purpose of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), is to provide a strategy for balancing the need to conserve Open Space and the need

to Convert Open Space to non-Open Space uses while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the Federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); providing and maintaining multiple-use Open Spaces which contribute to the quality of life of the residents of San Joaquin County; and accommodating a growing population while minimizing costs to Project Proponents and society at large.

San Joaquin County's past and future (2001-2051) growth has affected and will continue to affect 97 special status plant, fish and wildlife species in 52 vegetative communities scattered throughout San Joaquin County's 1,400+ square miles and 900,000+ acres, which include 43% of the Sacramento-San Joaquin Delta's Primary Zone. The SJMSCP, in accordance with ESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the Conversion of Open Space to non-Open Space uses which affect the plant, fish and wildlife species covered by the Plan, hereinafter referred to as "SJMSCP Covered Species". In addition, the SJMSCP provides some compensation to offset the impacts of open space land conversions on non-wildlife related resources such as recreation, agriculture, scenic values and other beneficial Open Space uses.

The SJMSCP compensates for Conversions of Open Space for the following activities: urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing Preserves, and similar public agency projects. These activities will be undertaken by both public and private individuals and agencies throughout San Joaquin County and within the County's incorporated cities. Public agencies including Caltrans (for transportation projects), and the San Joaquin Council of Governments (for transportation projects) also will undertake activities which will be covered by the SJMSCP. In addition, 5,340 acres is allocated for anticipated projects (e.g., annexations, general plan amendments)

The 97 SJMSCP Covered Species include 25 state and/or federally listed species. The SJMSCP Covered Species include 27 plants (6 listed), 4 fish (2 listed), 4 amphibians (1 listed), 4 reptiles (1 listed), 33 birds (7 listed), 15 mammals (3 listed) and 10 invertebrates (5 listed).

***Implementation:*** The SJMSCP is administered by a Joint Powers Authority consisting of members of the San Joaquin County Council of Governments (SJCOG), the CDFW, and the USFWS. Development project applicants are given the option of participating in the SJMSCP as a way to streamline compliance with required local, State and federal laws regarding biological resources, and typically avoid having to approach each agency independently. According to the SJMSCP, adoption and implementation by local planning jurisdictions provides full compensation and mitigation for impacts to plants, fish and wildlife. Adoption and implementation of the SJMSCP also secures compliance pursuant to the state and federal laws such as CEQA, the National Environmental Policy Act (NEPA), the Planning and Zoning Law, the State Subdivision Map Act, the Porter-Cologne Act and the Cortese-Knox Act in regard to species covered under the SJMSCP.

Applicants pay mitigation fees on a per-acre basis, as established by the Joint Powers Authority according to the measures needed to mitigate impacts to the various habitat and biological resources. Different types of land require different levels of mitigation; i.e., one category requires that one acre of a similar land type be preserved for each acre developed, while another type requires that two acres be preserved

for each acre developed. The entire County is mapped according to these categories so that land owners, project proponents and project reviewers are easily aware of the applicable SJMSCP fees for the proposed development. Figure 5.2-4 displays the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan's Land Compensation Map.

The appropriate fees are collected by the City and remitted to SJCOG for administration. SJCOG uses the funds to preserve open space land of comparable types throughout the County, often coordinating with other private or public land trusts to purchase conservation easements or buy land outright for preservation. Development occurring on land that has been classified under the SJMSCP as "no-pay" would not be required to pay a fee. This category usually refers to already urbanized land and infill development areas. Although the fees are automatically adjusted on an annual basis, based on the construction cost index, they often cannot keep pace with the rapidly rising land prices in the Central Valley.

### **City of Lathrop General Plan**

The City of Lathrop General Plan contains the following goals policies and implementation measures related to biological resources.

**Goal No. 5: Enhancing the Quality of Life and Biological Resources:** *It is a goal of the General Plan to enhance the quality of living by preventing the degradation of the natural environment, and by taking steps to off-set and alleviate the effects of that degradation which already has occurred, or which cannot be avoided. Biological resources are to be protected and preserved. Where feasible, natural conditions should be emulated as features of the community's systems of public and private open space.*

### **Part V Resource Management Element**

#### ***Vegetation, Fish and Wildlife Policies:***

1. The objective of habitat retention calls for:
  - The integration of waterway habitat areas as part of the area wide system of open space.
  - The preservation of all stands of vegetation along waterways which provide habitat, and achieving a standard of "no net loss of wetland acreage".
  - The careful introduction of public and private recreation activities within habitat areas which will not disturb natural conditions either through intensity of operations, high levels of noise generation, or scarring of the landscape through development activity.
  - The retention of hedgerows and other habitat areas within intensively farmed acreage which are compatible with agricultural operations.
  - The protection of fisheries by preventing discharge of contaminated surface waters to waterways.
2. The objective of habitat enhancement calls for:
  - The improvement of natural habitat along waterways.
  - The creation of new habitat within multi-purpose open space area designated for reuse of treated wastewater for wildlife management and recreation.

- Cooperative approaches among landowners to manage farmlands so as to increase the numbers of desirable species of wildlife.
3. The City has adopted (effective October 15, 1996) a Habitat Conservation Plan (HCP) for the Swainson's hawk. The acquisition of lands required as replacement habitat for nesting and foraging is to be funded by fees imposed upon developers whose land development activities would threaten, endanger or eliminate existing habitat within the Lathrop Planning Area. The HCP shall be based upon a current habitat field survey taken during the Swainson's hawk nesting season to determine whether Core Conservation Areas or only foraging habitat exists.

It is the intent of the City of Lathrop to be a good steward of its biological resources for the benefit of its citizens and the general public. The General Plan EIR acknowledges that significant impacts would occur to Swainson's hawks, and potentially significant impacts could occur to other species. Mitigation measures are provided in the General Plan EIR to mitigate the impacts. The purpose of the following information is to clarify the proposed mitigation as a matter of General Plan policy.

- a. A mitigation concept is presented on page 8-D-8 which states that the City should adopt its own HCP, or possibly participate in the plan being prepared by the City of Stockton. The City intends to prepare an HCP, in cooperation with other jurisdictions that would mutually benefit from Lathrop's HCP. Information and data from Stockton's HCP will be used to the extent appropriate. The City shall implement the following to fully mitigate impacts described in this policy and the EIR:
  - 1. An HCP developed by the City, which meets the standards specified by the State of California Department of Fish and Game.
  - 2. Participation in the "Stockton Plan". The "Stockton Plan" is a Habitat Management Plan which is, as of April 22, 1992, being developed by the Cities of Stockton, Tracy and Lathrop and the County of San Joaquin.
  - 3. Until it is participating in an HCP, the City shall not pre-zone and/or annex any real property or approve a specific plan for the development of real property, unless these conditions are met:
    - a. For each acre annexed to, pre-zoned by or which is the subject of a specific plan (subject to an event), the City will mitigate the loss of Swainson's hawk habitat by providing a one-to-one ratio habitat, including foraging habitat, or equal value.
    - b. All property subject to an event shall be considered Swainson's hawk habitat. Habitat acquired for will be called the "preserve acreage". "Preserve Acreage" may also consist of conservation easements, and in lien fee ownership of property and shall be subject to the following conditions:
      - 1. The "preserve acreage" must meet regulations specified by the State of California Department of Fish and Game.
      - 2. The "preserve acreage" must be located within one mile of the property subject to the event.
      - 3. The "preserve acreage" shall be deeded to the Department of Fish and Game, or the Land Utilization Trust.

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4. A mitigation fee shall not be sufficient mitigation for real property subject to an event, but actual mitigation by acquisition of real property or a conservation easement shall be required.
  5. A management fee will be collected in an amount to ensure that sufficient income will be available to manage the preserve property.
- b. Lathrop's HCP will be completed prior to the City allowing specific project EIR's to be completed for projects proposed west of Interstate 5. This will ensure that the necessary mitigation plans and agreements with the State Department of Fish and Game (DFG) are in place for protection of Swainson's hawks. The HCP process will commence as soon as reasonably possible after General Plan adoption, involving close cooperation with DFG. It is recognized that foraging habitat is one of the most important elements required for preservation of Swainson's hawks.
4. Developments proposed in sensitive biological areas shall be required to provide a site-specific analysis of the impacts of the project on fish and wildlife habitat. Because of the large-scale character of development proposed in the vicinity of biologically sensitive environments, including the conversion of several thousand acres of agricultural land to urban use, project proposals should be made to address ways in which new or enhanced habitat may be created as a trade-off to the general environmental impacts on biological resources associated with development under the General Plan.
  5. Land use within areas of riparian habitat shall be restricted to nature-oriented passive recreation, which may include an arboretum, zoological gardens, hiking and nature study essential linear infrastructure and other such uses compatible with existing or enhanced riparian habitats. Structures, which would reduce the amount of area available for water detention, should be prohibited within the Paradise Cut flood plain unless they are accompanied by concurrent expansion of such detention areas in or adjacent to Paradise Cut.
  6. A naturally landscaped corridor shall be provided along the western perimeter of SPA #2, which lies west of Interstate 5. This corridor should be wide enough to serve as a major component of the recreation and open space system, and should provide for a system of pedestrian, bicycle and equestrian trails where such uses are compatible with riparian habitats, where they exist. This corridor will also assure public access to the San Joaquin River as required by State policy and law and as permitted by RD-17.
  7. The visual amenities of water and its potential as wildlife habitat are to be reflected where feasible in all developments by the inclusion of bodies of water as components of urban form. Such bodies of water may be in the form of lakes, ponds, lagoons, simulated streams or similar features which can be integrated by design within recreation open space corridors, parks, commercial and residential areas and public sites. The multi-purposes use of water bodies for surface water drainage, flood control, wastewater reclamation, wildlife management, recreation and visual amenity is encouraged.

### Landscape Features:

Lands within or adjacent to the urban development boundary for the Lathrop Growth center are mostly devoid of any natural landscape features. However, ornamental trees and shrubs within the urban pattern (and croplands around it) have become essential components of the urban landscape, providing shade,



accent, color, windbreaks, and visual screening. Street trees have become especially important to the residential environment. In contrast, commercial/industrial areas east of Interstate 5 are almost barren of tree and shrub plantings.

1. Appropriate trees within public rights-of-way are to be retained and new street trees planted and maintained in accordance with policies and procedures of a Master Street Tree Plan and Street Tree Ordinance. Only trees which are either badly diseased, disruptive of street improvements because of root growth, or dangerous to the public shall be allowed to be removed.
2. The installation of street trees shall be made a condition of approval of residential, commercial, industrial and institutional development along such streets.

## ENVIRONMENTAL SETTING

### Geomorphic Provinces/Bioregion

The Planning Area is located in the western portion of the Great Valley Geomorphic Province of California. The Great Valley Province is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west. The San Joaquin River roughly bisects the city running north/south. This major river drains the Great Valley Province into the San Joaquin Delta to the north, ultimately discharging into the San Francisco Bay to the northwest.

The Planning Area is located within the San Joaquin Valley Bioregion, which is comprised of Kings County, most of Fresno, Kern, Merced, and Stanislaus counties, and portions of Madera, San Luis Obispo, and Tulare counties. The San Joaquin Valley Bioregion is the third most populous out of ten bioregions in the state, with an estimated 2 million people. The largest cities are Fresno, Bakersfield, Modesto, and Stockton. Interstate 5 and State Route 99 are the major north-south roads that run the entire length of the bioregion.

The bioregion is bordered on the west by the coastal mountain ranges. Its eastern boundary joins the southern two-thirds of the Sierra bioregion, which features Yosemite, Kings Canyon, and Sequoia National Parks. At its northern end, the San Joaquin Valley bioregion borders the southern end of the Sacramento Valley bioregion. To the west, south, and east, the bioregion extends to the edges of the valley floor.

Habitat in the bioregion includes vernal pools, valley sink scrub and saltbush, freshwater marsh, grasslands, arid plains, orchards, and oak savannah. Historically, millions of acres of wetlands flourished in the bioregion, but stream diversions for irrigation dried all but about five percent. Remnants of the wetland habitats are protected in this bioregion in publicly owned parks, reserves, and wildlife areas. The bioregion is considered the state's top agricultural producing region with the abundance of fertile soil.

### Vegetation

Vegetation occurring within the Planning Area primarily consists of agricultural, ruderal, riparian, and landscaping vegetation. Because of urban nature of the developed areas within the city and the active agricultural uses in surrounding lands, there is limited undisturbed natural vegetation. Common plant species observed in the Planning Area include: wild oat (*Avena barbata*), rip-gut brome (*Bromus diandrus*), softchess (*Bromus hordeaceus*) alfalfa (*Medicago sativa*), Russian thistle (*Salsola tragus*), Italian thistle (*Carduus pycnocephalus*), rough pigweed (*Amaranthus retroflexus*), sunflower (*Helianthus annuus*), tarragon (*Artemisia dracunculus*), coyote brush (*Baccharis pilularis*), prickly lettuce (*Lactuca serriola*), milk thistle (*Silybum marianum*), sow thistle (*Sonchus asper*), telegraph weed (*Heterotheca grandiflora*), barley (*Hordeum* sp.), mustard (*Brassica niger*), and heliotrope (*Heliotropium curassavicum*).

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### Wildlife

Agricultural, riparian vegetation along the San Joaquin River, and ruderal vegetation found in the Planning Area provides habitat for both common and special-status wildlife populations. For example, some commonly observed wildlife species in the region include: California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), American killdeer (*Charadrius vociferus*), gopher snake (*Pituophis melanoleucus*), garter snake (*Thamnophis species*), and western fence lizard (*Sceloporus occidentalis*), as well as many native insect species. There are also several bat species in the region. Bats often feed on insects as they fly over agricultural and natural areas.

Locally common and abundant wildlife species are important components of the ecosystem. Due to habitat loss, many of these species must continually adapt to using agricultural, ruderal, and ornamental vegetation for cover, foraging, dispersal, and nesting.

### Plant Communities

Agricultural and natural plant communities provide habitat for a variety of biological resources in the region. Sensitive habitats include those that are of special concern to resource agencies or those that are protected under a Habitat Conservation Plan, Natural Community Conservation Plan, the California Environmental Quality Act (CEQA), the Fish and Game Code, or the Clean Water Act (CWA). Additionally, sensitive habitats are usually protected under specific policies from local agencies. Figure 5.2-1 illustrates the plant communities (land cover types) in the Planning Area.

### CALIFORNIA WILDLIFE HABITAT RELATIONSHIP SYSTEM

The California Wildlife Habitat Relationship (CWHR) habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly-occurring birds, mammals, reptiles and amphibians. When first published in 1988, the classification scheme had 53 habitats. At present, there are 59 wildlife habitats in the CWHR System: 27 tree, 12 shrub, 6 herbaceous, 4 aquatic, 8 agricultural, 1 developed, and 1 non-vegetated.

According to the California Wildlife Habitat Relationship System there are 16 cover types (wildlife habitat classifications) in the Planning Area out of 59 found in the State. These include: Annual Grassland, Barren Land, Coastal Scrub, Cropland, Deciduous Orchard, Dryland Grain Crops, Eucalyptus, Evergreen Orchard, Fresh Emergent Wetland, Irrigated Grain Crops, Irrigated Hayfield, Irrigated Row and Field Crops, Riverine, Urban Land, Valley Foothill Riparian, and Vineyard.

Table 5.2-1 identifies the area by acreage for each cover type (classification) found in Lathrop (City limits and SOI). Figure 5.2-1 illustrates the location of each cover type (classification) within Lathrop. A brief description of each cover type follows.

**TABLE 5.2-1: COVER TYPES - CALIFORNIA WILDLIFE HABITAT RELATIONSHIP SYSTEM**

COVER TYPE	CITY (ACRES)	SOI (ACRES)	PLANNING AREA (TOTAL ACRES)
Annual Grassland	736.46	99.93	836.39
Barren	105.96	13.41	119.36
Coastal Scrub	6.20	0.00	6.20
Cropland	2,356.91	101.85	2,458.76

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<i>COVER TYPE</i>	<i>CITY (ACRES)</i>	<i>SOI (ACRES)</i>	<i>PLANNING AREA (TOTAL ACRES)</i>
Deciduous Orchard	162.83	17.91	180.75
Dryland Grain Crops	1,374.21	209.15	1,583.36
Eucalyptus	0.00	0.04	0.04
Evergreen Orchard	0.89	0.00	0.89
Fresh Emergent Wetland	9.17	7.93	17.09
Irrigated Grain Crops	779.44	1.15	780.59
Irrigated Hayfield	1,172.67	6.33	1,179.00
Irrigated Row and Field Crops	1,032.65	0.68	1,033.33
Riverine	329.61	37.28	366.89
Urban	4,460.35	230.32	4,690.67
Valley Foothill Riparian	304.63	4.64	309.27
Vineyard	8.01	1.33	9.34
<b>Total</b>	<b>12,839.98</b>	<b>731.95</b>	<b>13,571.93</b>

*SOURCE: SOURCE: CASIL GIS DATA, CALIFORNIA WILDLIFE HABITAT RELATIONSHIP SYSTEM, 2018*

### Developed Cover Types

**Cropland** includes a variety of sizes, shapes, and growing patterns. Field corn can reach ten feet while strawberries are only a few inches high. Although most crops are planted in rows, alfalfa hay and small grains (barley and wheat) form dense stands with up to 100 percent canopy closure. Most croplands support annuals, planted in spring and harvested during summer or fall. In many areas, second crops are commonly planted after harvesting the first. Wheat is planted in fall and harvested in late spring or early summer. Overwintering of sugar beets occurs in the Sacramento Valley, with harvesting in spring after the soil dries. Croplands are located on flat to gently rolling terrain. When flat terrain is put into crop production, it usually is leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers. Soils often dictate the crops grown. Climate influences the type of crops grown. Within the Planning Area, there are 2,458.76 acres of cropland habitat.

**Deciduous orchards** are typically open single species tree dominated habitats. Depending on the tree type and pruning methods they are usually low, bushy trees with an open understory to facilitate harvest. Trees range in height at maturity for many species from 15 to 30 ft, but may be 10 ft or less depending on the species. Crowns usually touch, and are usually in a linear pattern. Spacing between trees is uniform depending on desired spread of mature trees. The understory is usually composed of low-growing grasses, legumes, and other herbaceous plants, but may be managed to prevent understory growth totally or partially, such as along tree rows. Deciduous orchards can be found on flat alluvial soils in the valley floors, in rolling foothill areas, or on relatively steep slopes. Though some deciduous orchards are nonirrigated, most are irrigated. Some flat soils are flood irrigated, but many deciduous orchards are sprinkler irrigated. Large numbers of orchards are irrigated by drip or trickle irrigation systems. Most deciduous orchards are in valley or foothill areas, with a few, such as, apples and pears, up to 3,000 feet elevation. Within the Planning Area, there are 180.75 acres of deciduous orchard habitat.

**Evergreen orchards** are typically open single species tree dominated habitats. Depending on the tree type and pruning methods they are usually low, bushy trees with an open understory to facilitate harvest. Trees range in height at maturity for many species from 15 to 30 ft, but may be 10 ft or less depending on the species. Crowns often do not touch, and are usually in a linear pattern. Spacing between trees is uniform

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depending on desired spread of mature trees. The understory is usually composed of low-growing grasses, legumes, and other herbaceous plants, but may be managed to prevent understory growth totally or partially, such as along tree rows. Evergreen orchards can be found on flat alluvial soils in the valley floors, in rolling foothill areas, or on relatively steep slopes. All are irrigated. Some flat soils are flood irrigated, but most evergreen orchards are sprinkler irrigated. Large numbers of orchards are irrigated by drip or trickle irrigation systems. Most evergreen orchards are in valley or foothill areas. Except for olive, most evergreen orchard trees are not very frost tolerant. Within the Planning Area, there are 0.89 acres of evergreen orchard habitat.

**Vineyards** are composed of single species planted in rows, usually supported on wood and wire trellises. Vines are normally intertwined in the rows but open between rows. Rows under the vines are usually sprayed with herbicides to prevent growth of herbaceous plants. Between rows of vines, grasses and other herbaceous plants may be planted or allowed to grow as a cover crop to control erosion. Vineyards can be found on flat alluvial soils in the valley floors, in rolling foothill areas, or on relatively steep slopes. All are irrigated. Most vineyards are sprinkler irrigated. Large numbers of vineyards are irrigated by drip or trickle irrigation systems. Most vineyards are in valley or foothill areas. Within the Planning Area, there are 9.34 acres of vineyard habitat.

**Dryland Grain Crops** are composed of vegetation in the dryland (nonirrigated) grain and seed crops habitat includes seed producing grasses, primarily barley, cereal rye, oats, and wheat. These seed and grain crops are annuals. They are usually planted by drilling in rows which produce solid stands, forming 100 percent canopy at maturity in good stands. They are normally planted in fall and harvested in spring. However, they may be planted in rotation with other irrigated crops and winter wheat or barley may be planted after harvest of a previous crop in the fall, dry farmed (during the wet winter and early spring months), and then harvested in late spring. Within the Planning Area, there are 1,583.36 acres of Dryland Grain Crop habitat.

**Irrigated Grain Crops** include a variety of sizes, shapes and growing patterns. Field corn can reach ten feet tall while dry beans are only several inches tall. Most irrigated grain and seed crops are grown in rows. Some may form 100 percent canopy while others may have significant bare areas between rows. All seed and grain crops are annuals. They are usually planted in spring and harvested in summer or fall. However, they may be planted in rotation with other irrigated crops and sometimes winter wheat or barley may be planted after harvest of a previous crop in the fall, dry farmed (during the wet winter and early spring months) or they may be irrigated, and then harvested in the late spring. Within the Planning Area, there are 780.59 acres of Irrigated Grain Crop habitat.

**Irrigated Hayfield** normally has a 2 to 6 months initial growing period, depending on climate, and soil, this habitat is dense, with nearly 100 percent cover. Average height is about 0.46 m. (1.5 feet) tall. Planted fields generally are monocultures (the same species or mixtures or a few species with similar structural properties). Structure changes to a lower stature following each harvest, grows up again and reverts to bare ground following plowing or discing. Plowing may occur annually, but is usually less often. Layering generally does not occur in this habitat. Unplanted "native" hay fields may contain short and tall patches. If not harvested for a year, they may develop a dense thatch of dead leaves between the canopy and the ground. Within the Planning Area, there are 1,179.00 acres of Irrigated Hayfield habitat.

**Irrigated Row and Field Crops** include a variety of sizes, shapes and growing patterns. Cotton and asparagus can be three or four feet tall while others may be a foot or less high. Most irrigated row and field crops are grown in rows. Some may form 100 percent canopy while others may have significant bare areas between rows. Most are annuals, while others, such as asparagus and strawberries are perennial.

The annuals are usually planted in spring and harvested in summer or fall. However, they may be planted in rotation with other irrigated crops and sometimes winter wheat or barley may be planted after harvest of a previous crop in the fall, dry farmed (during the wet winter and early spring months), and then harvested in the late spring. In some areas of southern California three crops may be grown in a year. Within the Planning Area, there are 1,033.33 acres of Irrigated Row and Field Crop habitat.

**Urban** habitats are not limited to any particular physical setting. Three urban categories relevant to wildlife are distinguished: downtown, urban residential, and suburbia. The heavily-developed downtown is usually at the center, followed by concentric zones of urban residential and suburbs. There is a progression outward of decreasing development and increasing vegetative cover. Species richness and diversity is extremely low in the inner cover. The structure of urban vegetation varies, with five types of vegetative structure defined: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. A distinguishing feature of the urban wildlife habitat is the mixture of native and exotic species. Within the Planning Area, there are 4,690.67 acres of urban habitat.

### Shrub Cover Types

**Coastal Scrub** occurs discontinuously in a narrow strip throughout the length of California, usually occurs within about 45 km (20 mi) of the ocean. Coastal Scrub is typified by low to moderate-sized shrubs with mesophytic leaves, flexible branches, semi-woody stems growing from a woody base, and a shallow root system. Coastal Scrub appears to support numbers of vertebrate species roughly equivalent to those in surrounding habitats. The Federal and State listed endangered peregrine falcon, Morro Bay kangaroo rat and the Santa Cruz long-toed salamander all occur in Coastal Scrub, though not exclusively. A subspecies of the black-tailed gnatcatcher, a California Department of Fish and Game Species of Special Concern, is found exclusively in southern sage scrub. Within the Planning Area, there are 6.204 acres of Coastal Scrub habitat.

### Herbaceous Cover Types

**Annual Grassland** habitat occurs mostly on flat plains to gently rolling foothills. Climatic conditions are typically Mediterranean, with cool, wet winters and dry, hot summers. The length of the frost-free season averages 250 to 300 days. Annual precipitation is highest in northern California. Within the Planning Area, there are 836.39 acres of annual grassland habitat.

**Fresh emergent wetland** habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. They are most common on level to gently rolling topography. They are found in various depressions or at the edge of rivers or lakes. Soils are predominantly silt and clay, although coarser sediments and organic material may be intermixed. In some areas organic soils (peat) may constitute the primary growth medium. Climatic conditions are highly variable and range from the extreme summer heat to winter temperatures well below freezing. Within the Planning Area, there are 17.09 acres of fresh emergent wetland habitat.

### Tree Dominated Cover Types

**Valley-foothill riparian** habitats are found in valleys bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. They are generally associated with low velocity flows, flood plains, and gentle topography. Valleys provide deep alluvial soils and a high water table. The substrate is coarse, gravelly, or rocky soils more or less permanently moist, but probably well aerated. Frost and short periods of freezing occur in winter (200 to 350 frost-free days). This habitat is characterized by hot, dry summers and mild and wet winters. Temperatures range from 75 to 102 F in the summer to 29 to 44 F in

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the winter. Average precipitation ranges from 6-30 inches, with little or no snow. The growing season is 7 to 11 months. Within the Planning Area, there are 309.27 acres of valley-foothill riparian habitat.

**Eucalyptus** habitats range from single-species thickets with little or no shrubby understory to scattered trees over a well-developed herbaceous and shrubby understory. In most cases, eucalyptus forms a dense stand with a closed canopy. Stand structure for this habitat may vary considerably because most eucalyptus have been planted into either rows for wind protection or dense groves for hardwood production and harvesting. Eucalyptus is often found in monotypic stands. The genus is composed of over 150 species with high morphological diversity. Thus, habitat structure may be affected if more than two or three species coexist. Tree size may vary considerably depending on spacing and species. Typically, trees may range in height from 26 to 40 m (87 to 133 ft) and have diameters (dbh) of 21.8 to 38.4 cm (8.6 to 15.1 in) (Walters 1980), with most growth occurring in the first 15 years. Trees in excess of 46 to 80 m (152 to 264 ft) are not uncommon. Within the Planning Area, there are 0.04 acres of Eucalyptus habitat.

### Other Habitats

**Barren** habitat is defined by the absence of vegetation. Any habitat with <2% total vegetation cover by herbaceous, desert, or non-wildland species and <10% cover by tree or shrub species is defined this way. The physical settings for permanently barren habitat represent extreme environments for vegetation. An extremely hot or cold climate, a near-vertical slope, an impermeable substrate, constant disturbance by either human or natural forces, or a soil either lacking in organic matter or excessively saline can each contribute to a habitat being inhospitable to plants. Within the Planning Area, there are 119.36 acres of barren habitat.

### Aquatic Habitats

**Riverine** habitats can occur in association with many terrestrial habitats. Riverine habitats are found adjacent to many rivers and streams. Riverine habitats are also found contiguous to lacustrine and fresh emergent wetland habitats. This habitat requires intermittent or continually running water generally originating at some elevated source, such as a spring or lake, and flows downward at a rate relative to slope or gradient and the volume of surface runoff or discharge. Velocity generally declines at progressively lower altitudes, and the volume of water increases until the enlarged stream finally becomes sluggish. Over this transition from a rapid, surging stream to a slow, sluggish river, water temperature and turbidity will tend to increase, dissolved oxygen will decrease, and the bottom will change from rocky to muddy. Within the Planning Area, there are 366.89 acres of riverine habitat.

## SPECIAL-STATUS SPECIES

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The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database (CNDDDB), the background search was regional in scope and focused on the documented occurrences within 1 mile and within a 9 Quad search area of Lathrop.

### Special Status Plants

The search revealed documented occurrences of three special status plant species within one mile of the Lathrop Planning Area. The search revealed documented occurrences of 25 special status plant species within a Nine-Quad search of the Lathrop Planning Area.

Tables 5.2-2 and 5.2-3 provide a list of special-status plant species that are documented within one-mile and 9-quads of the Planning Area, and their current protective status. Figure 5.2-2 illustrates the special

## 5.0 CONSERVATION AND NATURAL RESOURCES

status species located within a Nine Quad search of the Planning Area. Figure 5.2-3 illustrates the special status species located within one mile of the Planning Area.

**TABLE 5.2-2: SPECIAL STATUS PLANTS PRESENT OR POTENTIALLY PRESENT (ONE MILE)**

<i>PLANTS SPECIES</i>	<i>COMMON NAME</i>	<i>FEDERAL STATUS</i>	<i>CALIFORNIA STATUS</i>
<i>Eryngium racemosum</i>	Delta button-celery	None	Endangered
<i>Trichocoronis wrightii</i> var. <i>wrightii</i>	Wright's trichocoronis	None	None
<i>Cirsium crassicaule</i>	Slough Thistle	None	None

SOURCE: CDFW CNDDDB 2018

**TABLE 5.2-3: SPECIAL STATUS PLANTS PRESENT OR POTENTIALLY PRESENT (9 QUAD)**

<i>PLANTS SPECIES</i>	<i>COMMON NAME</i>	<i>FEDERAL STATUS</i>	<i>CALIFORNIA STATUS</i>
<i>Eryngium racemosum</i>	Delta button-celery	None	Endangered
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	None	Rare
<i>Blepharizonia plumosa</i>	big tarplant	None	None
<i>Cirsium crassicaule</i>	slough thistle	None	None
<i>Madia radiata</i>	showy golden madia	None	None
<i>Trichocoronis wrightii</i> var. <i>wrightii</i>	Wright's trichocoronis	None	None
<i>Symphotrichum lentum</i>	Suisun Marsh aster	None	None
<i>Amsinckia grandiflora</i>	large-flowered fiddleneck	Endangered	Endangered
<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum	None	None
<i>Brasenia schreberi</i>	watershield	None	None
<i>Atriplex cordulata</i> var. <i>cordulata</i>	heartscale	None	None
<i>Extriplex joaquinana</i>	San Joaquin spearscale	None	None
<i>Atriplex minuscula</i>	lesser saltscale	None	None
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch	None	None
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Delta tule pea	None	None
<i>Trifolium hydrophilum</i>	saline clover	None	None
<i>California macrophylla</i>	round-leaved filaree	None	None
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	woolly rose-mallow	None	None
<i>Eschscholzia rhombipetala</i>	diamond-petaled California poppy	None	None

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<i>PLANTS SPECIES</i>	<i>COMMON NAME</i>	<i>FEDERAL STATUS</i>	<i>CALIFORNIA STATUS</i>
<i>Delphinium recurvatum</i>	recurved larkspur	None	None
<i>Chloropyron palmatum</i>	palmate-bracted salty bird's-beak	Endangered	Endangered
<i>Limosella australis</i>	Delta mudwort	None	None
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	None	None
<i>Carex comosa</i>	bristly sedge	None	None
<i>Puccinellia simplex</i>	California alkali grass	None	None

SOURCE: CDFW CNDDDB 2018

### Special Status Animals

The search revealed documented occurrences of 35 special status animal species within a 9-Quad search of the Planning Area. Of these species, 10 are documented within one mile of the city. Tables 5.2-4, and 5.2-5 provide a list of the special-status animal species that are documented within one mile and 10 miles of the Planning Area, and current protective status. Figure 5.2-2 illustrates the location of documented occurrences within 10 miles, and Figure 5.2-3 shown documented occurrences within one mile of the Planning Area.

**TABLE 5.2-4: SPECIAL STATUS ANIMALS PRESENT OR POTENTIALLY PRESENT (ONE MILE)**

<i>ANIMAL SPECIES</i>	<i>COMMON NAME</i>	<i>FEDERAL STATUS</i>	<i>CALIFORNIA STATUS</i>
<i>Ambystoma californiense</i>	California tiger salamander	Threatened	Threatened
<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened
<i>Athene cunicularia</i>	burrowing owl	None	None
<i>Lanius ludovicianus</i>	loggerhead shrike	None	None
<i>Melospiza melodia</i>	song sparrow ("Modesto" population)	None	None
<i>Agelaius tricolor</i>	tricolored blackbird	None	Candidate Endangered
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	None	None
<i>Oncorhynchus mykiss irideus</i> pop. 11	steelhead - Central Valley DPS	Threatened	None
<i>Spirinchus thaleichthys</i>	longfin smelt	Candidate	Threatened
<i>Sylvilagus bachmani riparius</i>	riparian brush rabbit	Endangered	Endangered

SOURCE: CDFW CNDDDB 2018

**TABLE 5.2-5: SPECIAL STATUS ANIMALS PRESENT OR POTENTIALLY PRESENT (9 QUAD)**

<i>ANIMAL SPECIES</i>	<i>COMMON NAME</i>	<i>FEDERAL STATUS</i>	<i>CALIFORNIA STATUS</i>
<i>Ambystoma californiense</i>	California tiger salamander	Threatened	Threatened
<i>Spea hammondi</i>	western spadefoot	None	None
<i>Rana draytonii</i>	California red-legged frog	Threatened	None
<i>Rana boylei</i>	foothill yellow-legged frog	None	Candidate Threatened
<i>Branta hutchinsii leucopareia</i>	cackling (=Aleutian Canada) goose	Delisted	None



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<i>ANIMAL SPECIES</i>	<i>COMMON NAME</i>	<i>FEDERAL STATUS</i>	<i>CALIFORNIA STATUS</i>
<i>Elanus leucurus</i>	white-tailed kite	None	None
<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened
<i>Falco columbarius</i>	merlin	None	None
<i>Laterallus jamaicensis coturniculus</i>	California black rail	None	Threatened
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	Threatened	Endangered
<i>Athene cunicularia</i>	burrowing owl	None	None
<i>Eremophila alpestris actia</i>	California horned lark	None	None
<i>Lanius ludovicianus</i>	loggerhead shrike	None	None
<i>Vireo bellii pusillus</i>	least Bell's vireo	Endangered	Endangered
<i>Melospiza melodia</i>	song sparrow ("Modesto" population)	None	None
<i>Agelaius tricolor</i>	tricolored blackbird	None	Candidate Endangered
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	None	None
<i>Oncorhynchus mykiss irideus pop. 11</i>	steelhead - Central Valley DPS	Threatened	None
<i>Hypomesus transpacificus</i>	Delta smelt	Threatened	Endangered
<i>Spirinchus thaleichthys</i>	longfin smelt	Candidate	Threatened
<i>Mylopharodon conocephalus</i>	hardhead	None	None
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None
<i>Antrozous pallidus</i>	pallid bat	None	None
<i>Eumops perotis californicus</i>	western mastiff bat	None	None
<i>Sylvilagus bachmani riparius</i>	riparian brush rabbit	Endangered	Endangered
<i>Perognathus inornatus</i>	San Joaquin Pocket Mouse	None	None
<i>Neotoma fuscipes riparia</i>	riparian (=San Joaquin Valley) woodrat	Endangered	None
<i>Neotoma fuscipes riparia</i>	riparian (=San Joaquin Valley) woodrat	Endangered	None
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	Endangered	Threatened
<i>Taxidea taxus</i>	American badger	None	None
<i>Emys marmorata</i>	western pond turtle	None	None
<i>Phrynosoma blainvillii</i>	coast horned lizard	None	None
<i>Arizona elegans occidentalis</i>	California glossy snake	None	None
<i>Masticophis flagellum ruddocki</i>	San Joaquin coachwhip	None	None
<i>Thamnophis gigas</i>	giant gartersnake	Threatened	Threatened

SOURCE: CDFW CNDDDB 2018

### Special Status Invertebrate Animals

The search revealed documented occurrences of 9 special status invertebrate animals including insect species within a 9-quad search area. Of these species, two (western bumble bee *Bombus occidentalis*, and moestan blister beetle *Lytta moesta*) are documented within one mile of the Planning Area. Tables 5.2-6, provides a list of the special-status Invertebrate Animal species that are documented within the vicinity of the Planning Area, and their current protective status. Figure 5.2-2 illustrates the location of

## 5.0 CONSERVATION AND NATURAL RESOURCES

documented occurrences within the 9-quad search radius of Planning Area, and Figure 5.2-3 shown documented occurrences within one mile of the Planning Area.

**TABLE 5.2-6: SPECIAL STATUS INVERTEBRATE ANIMALS PRESENT OR POTENTIALLY PRESENT (9 QUAD)**

<i>ANIMAL SPECIES</i>	<i>COMMON NAME</i>	<i>FEDERAL STATUS</i>	<i>CALIFORNIA STATUS</i>
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	Endangered	None
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	Threatened	None
<i>Linderiella occidentalis</i>	California linderiella	None	None
<i>Lepidurus packardi</i>	vernal pool tadpole shrimp	Endangered	None
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	Threatened	None
<i>Anthicus sacramento</i>	Sacramento anthicid beetle	None	None
<i>Lytta moesta</i>	moestan blister beetle	None	None
<i>Bombus occidentalis</i>	western bumble bee	None	None
<i>Bombus crotchii</i>	Crotch bumble bee	None	None

SOURCE: CDFW CNDDDB 2018

### Sensitive Natural Communities

The California Department of Fish and Wildlife (CDFW) considers sensitive natural communities to have significant biotic value, with species of plants and animals unique to each community. The CNDDDB search revealed five sensitive natural communities within a Nine-Quad search area. This includes: Coastal and Valley Freshwater Marsh, Great Valley Cottonwood Riparian Forest, Great Valley Cottonwood Riparian Forest, Great Valley Valley Oak Riparian Forest, and Elderberry Savanna.

All of these community types were once more widely distributed throughout California, but have been modified or destroyed by grazing, cultivation, and urban development. Since the remaining examples of these sensitive natural communities are under continuing threat from future development, CDFW considers them “highest inventory priorities” for future conservation. Of these sensitive natural communities documented within proximity of Lathrop, only one (Great Valley Valley Oak Riparian Forest) is located within one mile of the city.

### SALMON AND STEELHEAD TROUT FISHERIES

Salmon and steelhead trout are anadromous fish species that are present in the Bay Delta and San Joaquin and Sacramento River Basins. Anadromous fish are born in freshwater rivers and streams, and then migrate to the Pacific Ocean to grow and mature before returning to their place of origin to spawn. The San Joaquin and Sacramento River system produces most of the Chinook salmon (*Oncorhynchus tshawytscha*) and a large percentage of the steelhead trout (*Oncorhynchus mykiss*) in California.

Anadromous fish resources once flourished naturally in the San Joaquin and Sacramento River system, but as a result of habitat destruction from water storage/diversion projects, flood control, mining, sedimentation, and bank degradation, they are protected species under the Federal Endangered Species Act. The San Joaquin and Sacramento River system has historically supported steelhead trout and four distinct spawning runs of Chinook salmon: fall, late fall, winter, and spring. The salmon runs have declined since the late 1800s and are now characterized as episodic. The Central Valley steelhead was Federally listed as threatened in 2003. The fall/late fall-run salmon is a Federal and State species of concern, and a candidate species for Federal listing. The spring-run Chinook salmon population is listed as threatened by both Federal and State agencies. Winter-run Chinook salmon population is listed as a Federally and State

endangered species. Populations of Central Valley Steelhead and Chinook salmon are supported by natural spawning grounds and hatcheries within the San Joaquin and Sacramento River Basin.

Water remaining behind the dams by the start of the spawning run in October is often warmed by summer heat. Warm water and low water elevation are harmful to most coldwater anadromous fish species. Riparian vegetation is critical for the maintenance of high quality fish habitat. It provides cover, controls temperature, stabilizes stream banks, provides food, and buffers streams from erosion and impacts of adjacent land uses. Riparian vegetation also affects stream depth, current velocity, and substrate composition. The decline of riparian communities in California is a factor contributing to the loss of high quality fish habitat.

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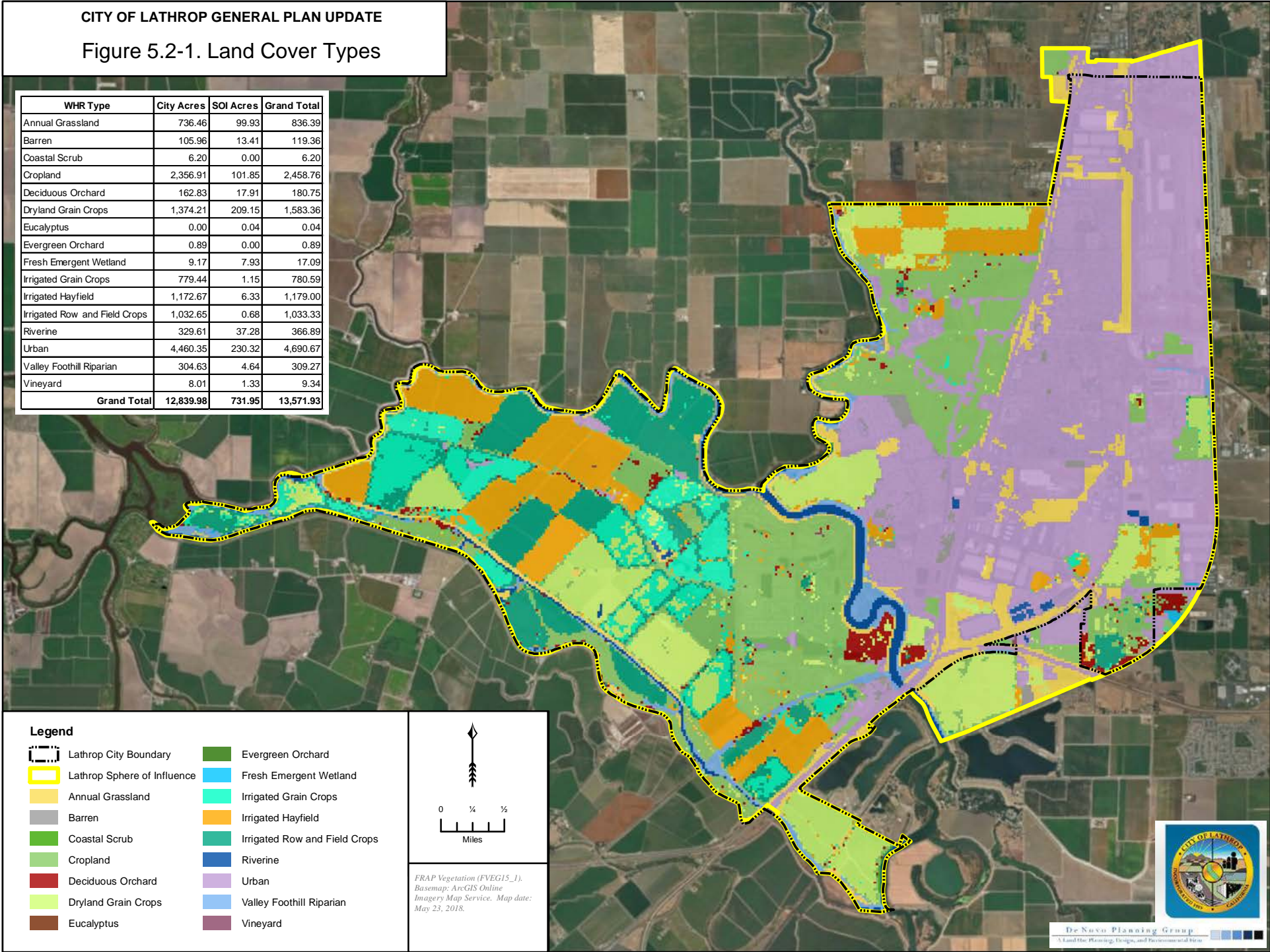
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CITY OF LATHROP GENERAL PLAN UPDATE

Figure 5.2-1. Land Cover Types

WHR Type	City Acres	SOI Acres	Grand Total
Annual Grassland	736.46	99.93	836.39
Barren	105.96	13.41	119.36
Coastal Scrub	6.20	0.00	6.20
Cropland	2,356.91	101.85	2,458.76
Deciduous Orchard	162.83	17.91	180.75
Dryland Grain Crops	1,374.21	209.15	1,583.36
Eucalyptus	0.00	0.04	0.04
Evergreen Orchard	0.89	0.00	0.89
Fresh Emergent Wetland	9.17	7.93	17.09
Irrigated Grain Crops	779.44	1.15	780.59
Irrigated Hayfield	1,172.67	6.33	1,179.00
Irrigated Row and Field Crops	1,032.65	0.68	1,033.33
Riverine	329.61	37.28	366.89
Urban	4,460.35	230.32	4,690.67
Valley Foothill Riparian	304.63	4.64	309.27
Vineyard	8.01	1.33	9.34
<b>Grand Total</b>	<b>12,839.98</b>	<b>731.95</b>	<b>13,571.93</b>

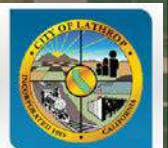


Legend

- Lathrop City Boundary
- Lathrop Sphere of Influence
- Annual Grassland
- Barren
- Coastal Scrub
- Cropland
- Deciduous Orchard
- Dryland Grain Crops
- Eucalyptus
- Evergreen Orchard
- Fresh Emergent Wetland
- Irrigated Grain Crops
- Irrigated Hayfield
- Irrigated Row and Field Crops
- Riverine
- Urban
- Valley Foothill Riparian
- Vineyard

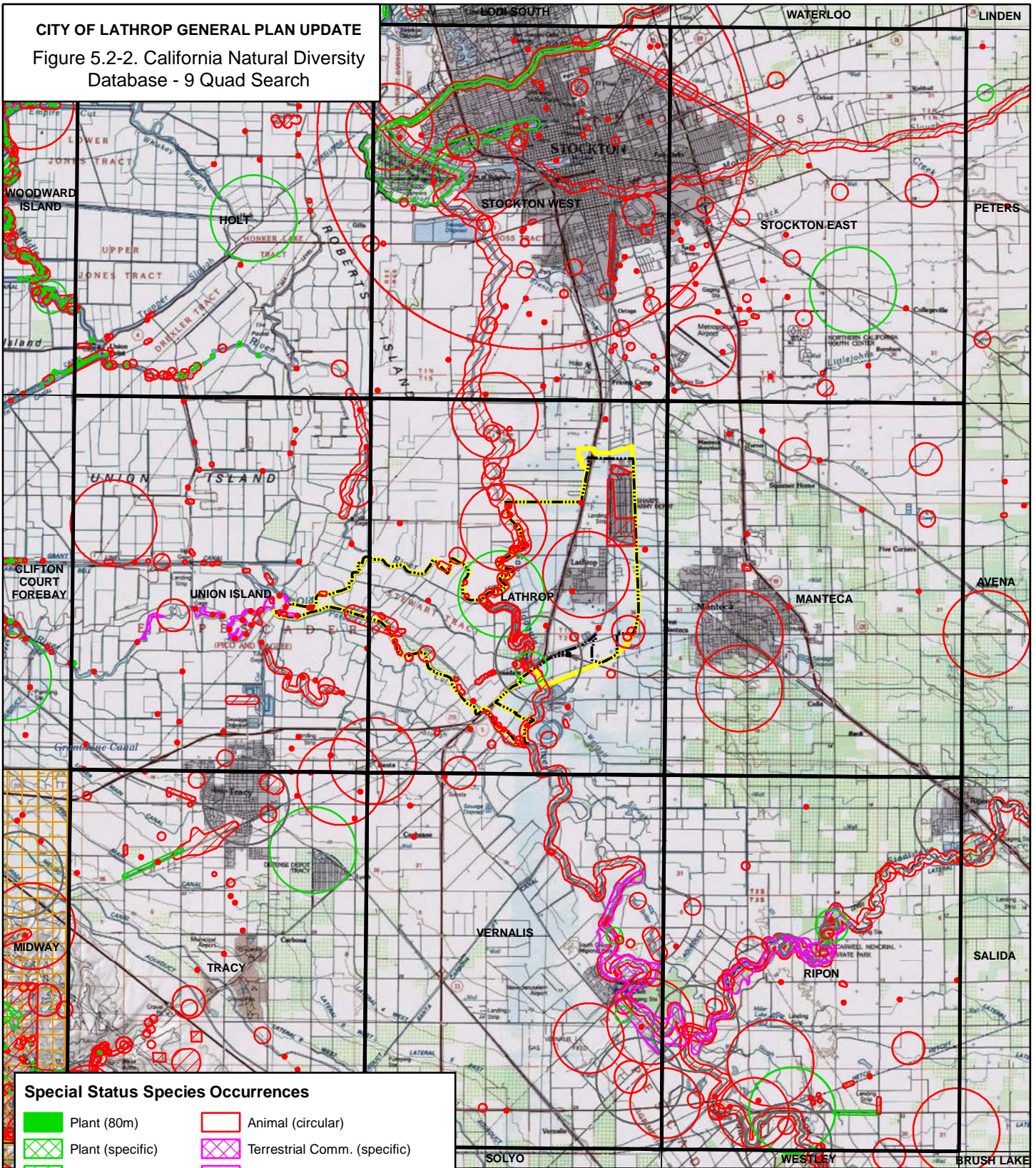


FRAP Vegetation (FVEG15\_1).  
 Basemap: ArcGIS Online  
 Imagery Map Service. Map date:  
 May 23, 2018.



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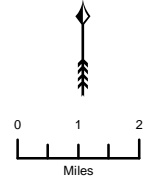
**CITY OF LATHROP GENERAL PLAN UPDATE**  
**Figure 5.2-2. California Natural Diversity**  
**Database - 9 Quad Search**



**Special Status Species Occurrences**

Plant (80m)	Animal (circular)
Plant (specific)	Terrestrial Comm. (specific)
Plant (non-specific)	Terrestrial Comm. (circular)
Plant (circular)	Multiple (non-specific)
Animal (80m)	Multiple (circular)
Animal (specific)	Sensitive EO's (Commercial only)
Animal (non-specific)	

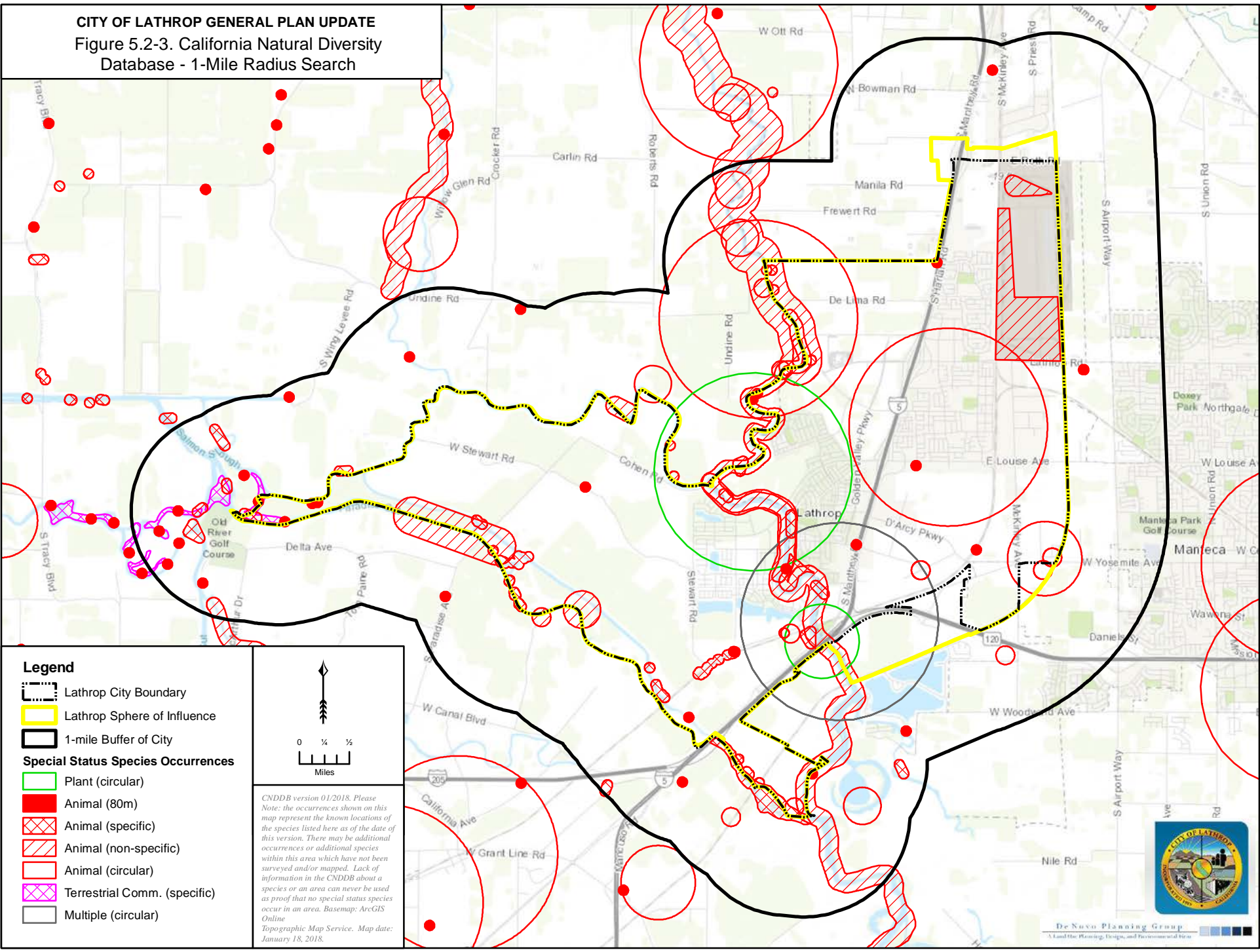
CNDD version 091/2018. Please Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDD about a species or an area can never be used as proof that no special status species occur in an area. Basemap: ArcGIS Online Topographic Map Service. Map date: January 18, 2018.



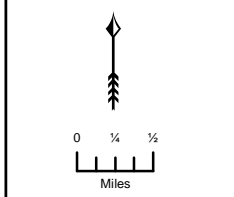
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**CITY OF LATHROP GENERAL PLAN UPDATE**  
**Figure 5.2-3. California Natural Diversity**  
**Database - 1-Mile Radius Search**



- Legend**
- Lathrop City Boundary
  - Lathrop Sphere of Influence
  - 1-mile Buffer of City
  - Special Status Species Occurrences**
  - Plant (circular)
  - Animal (80m)
  - Animal (specific)
  - Animal (non-specific)
  - Animal (circular)
  - Terrestrial Comm. (specific)
  - Multiple (circular)



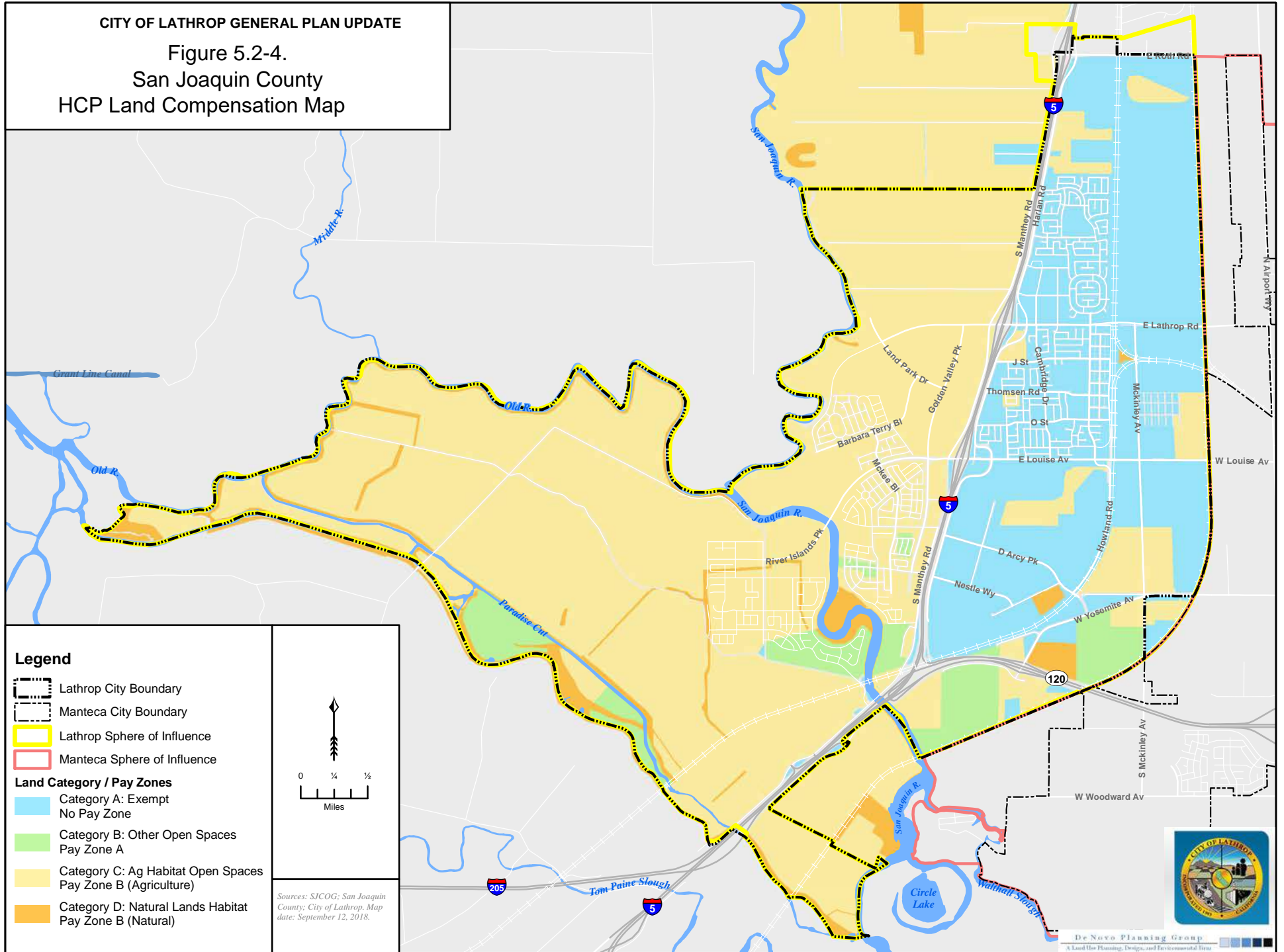
CNDDDB version 01/2018. Please Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDDB about a species or an area can never be used as proof that no special status species occur in an area. Basemap: ArcGIS Online Topographic Map Service. Map date: January 18, 2018.



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CITY OF LATHROP GENERAL PLAN UPDATE

Figure 5.2-4.  
San Joaquin County  
HCP Land Compensation Map



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## 5.3 AIR QUALITY

This section discusses the regulatory framework, regional climate, air pollution potential, and existing ambient air quality for criteria air pollutants, toxic air contaminants, odors, and dust. Information presented in this section is based in part on information gathered from the San Joaquin Valley Air Pollution Control District (SJVAPCD) and the California Air Resources Board (CARB).

### REGULATORY FRAMEWORK

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#### *FEDERAL*

#### **Clean Air Act**

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

The law recognizes the importance for each state to locally carry out the requirements of the FCAA, as special consideration of local industries, geography, housing patterns, etc. are needed to have full comprehension of the local pollution control problems. As a result, the EPA requires each state to develop a State Implementation Plan (SIP) that explains how each state will implement the FCAA within their jurisdiction. A SIP is a collection of rules and regulations that a particular state will implement to control air quality within their jurisdiction. CARB is the state agency that is responsible for preparing the California SIP.

#### **Transportation Control Measures**

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are typically also created to address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

#### **Federal Hazardous Air Pollutant Program**

Title III of the FCAA requires the EPA to promulgate national emissions standards for hazardous air pollutants (NESHAPs). The NESHAP may differ for major sources than for area sources of HAPs (major sources are defined as stationary sources with potential to emit more than 10 tons per year [TPY] of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources). The emissions standards are to be promulgated in two phases. In the first phase (1992–2000), the EPA

## 5.0 CONSERVATION AND NATURAL RESOURCES

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developed technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring maximum available control technology (MACT). These Federal rules are also commonly referred to as MACT standards, because they reflect the Maximum Achievable Control Technology. For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), the EPA is required to promulgate health risk–based emissions standards were deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards. The FCAA required the EPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions, at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, §219 required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions.

*STATE*

### **CARB Mobile-Source Regulation**

The State of California is responsible for controlling emissions from the operation of motor vehicles in the state. Rather than mandating the use of specific technology or the reliance on a specific fuel, the CARB’s motor vehicle standards specify the allowable grams of pollution per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, the CARB has adopted regulations which required auto manufacturers to phase in less polluting vehicles.

### **California Clean Air Act**

The California Clean Air Act (CCAA) was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state’s air quality goals, planning and regulatory strategies, and performance. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the federal standards. The San Joaquin Valley Air Pollution Control District is one of 35 air quality management districts that have prepared air quality management plans to accomplish a five percent annual reduction in emissions documenting progress toward the state ambient air quality standards.

### **Air Quality Standards**

NAAQS are determined by the EPA. The standards include both primary and secondary ambient air quality standards. Primary standards are established with a safety margin. Secondary standards are more stringent than primary standards and are intended to protect public health and welfare. States have the ability to set standards that are more stringent than the federal standards. As such, California established more stringent ambient air quality standards.

Federal and state ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM<sub>10</sub>, and lead. In addition, California has created standards for pollutants that are not covered by federal standards. The state and federal primary standards for major pollutants are shown in Table 5.3-1.

### **Tanner Air Toxics Act**

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure

for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs and has adopted EPA's list of HAPs as TACs. Most recently, diesel PM was added to the ARB list of TACs. Once a TAC is identified, ARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions.

The AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. ARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In February 2000, ARB adopted a new public-transit bus-fleet rule and emission standards for new urban buses. These rules and standards provide for (1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Upcoming milestones include the low-sulfur diesel-fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide.

### **Transport of Pollutants**

The California Clean Air Act, Section 39610 (a), directs the CARB to "identify each district in which transported air pollutants from upwind areas outside the district cause or contribute to a violation of the ozone standard and to identify the district of origin of transported pollutants." The information regarding the transport of air pollutants from one basin to another was to be quantified to assist interrelated basins in the preparation of plans for the attainment of State ambient air quality standards. Numerous studies conducted by the CARB have identified air basins that are impacted by pollutants transported from other air basins (as of 1993). Among the air basins affected by air pollution transport from the SFBAAB are the North Central Coast Air Basin, the Mountain Counties Air Basin, the San Joaquin Valley Air Basin, and the Sacramento Valley Air Basin. The SFBAAB was also identified as an area impacted by the transport of air pollutants from the Sacramento region.

#### *LOCAL*

### **San Joaquin Valley Air Pollution Control District**

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is the local agency with primary responsibility for compliance with both the federal and state standards and for ensuring that air quality conditions are maintained. They do this through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The eight counties that comprise the SJVAPCD are divided into three regions. These include:

- Northern Region: Merced, San Joaquin, and Stanislaus Counties
- Central Region: Madera, Fresno, and Kings Counties
- Southern Region: Tulare and Valley portion of Kern Counties

Activities of the SJVAPCD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution,

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issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the FCAA and CCAA.

### *SJVAPCD RULES AND REGULATIONS*

The SJVAPCD has adopted numerous rules and regulations to implement its air quality plans. Following, are significant rules that will apply to development under the General Plan.

#### **Regulation VIII – Fugitive PM10 Prohibitions**

Regulation VIII is comprised of District Rules 8011 through 8081 which are designed to reduce PM10 emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc.

#### **Rule 4002 – National Emission Standards for Hazardous Air Pollutants**

Rule 4002 applies in the event an existing building will be renovated, partially demolished or removed (National Emission Standards for Hazardous Air Pollutants); this rule applies to all sources of Hazardous Air Pollutants.

#### **Rule 4102 – Nuisance**

Rule 4102 dictates that if a source operation emits or may emit air contaminants or other materials such that the emissions create a public nuisance, the owner/operator may be subject to APCD enforcement action.

#### **Rule 4103 – Open Burning**

Rule 4103 prohibits the burning of agricultural material when the land is converting from agriculture to non-agricultural (i.e. urban) purposes.

#### **Rule 4601 – Architectural Coatings**

Rule 4601 limits emissions of volatile organic compounds from architectural coatings by specifying storage, cleanup and labeling requirements.

#### **Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations**

If asphalt paving will be used, then paving operations of the proposed Project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

#### **Rule 8021 – Construction, Demolition, Excavation, and Other Earthmoving Activities**

District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project.

#### **Rule 9510 – Indirect Source Review**

Rule 9510 indirectly limits the vehicular emissions contribution of new development to regional air pollution. Through an application and review process, the developer may incorporate emission-reduction features in the project or may pay the fee prescribed in the rule. Fees collected by the APCD are indexed to the cost of providing offsetting mitigation and are used for that purpose.



## City of Lathrop General Plan

The existing Lathrop General Plan includes the following goals and policies related to air quality:

**GOAL #5 – Enhancing the Quality of Life: It is a goal of the General Plan to enhance the quality of living by preventing the degradation of the natural environment, and by taking steps to off-set and alleviate the effects of that degradation which already has occurred or which cannot be avoided. Where feasible, natural conditions should be emulated as features of the community's systems of public and private open space.**

**POLICY 1** – Mitigation of air quality impacts is to be achieved in part through the design and construction of an efficient system of arterial and collector streets and interchange and freeway improvements that will assure high levels of traffic service and the avoidance of unmanageable levels of traffic congestion.

**POLICY 2** – Mitigation of air quality impacts is to be achieved in part through the development of a regional rail transit service to be incorporated into early stages of development within both growth centers.

**POLICY 3** – The City shall adopt standards which require industrial process analysis before the fact of site and building permit approval to assure compliance with State air quality and water quality standards. Standards should provide for periodic monitoring of industrial processes which could have an adverse impact on water or air quality. Industrial process review that may be required should be conducted as part of environmental assessment by an engineer licensed in California having demonstrated experience in the industrial processes involved.

**POLICY 4** – The City shall require positive control of dust particles during project construction activities, including watering or use of emulsions, parking of heavy equipment on paved surfaces, prohibition of land grading operations during days of high wind (beginning at 10 mph, with gusts exceeding 20 mph), and prohibition of burning on vacant parcels. The City should seek the cooperation of agricultural operators to refrain from the plowing of fields on windy days, and to keep loose soils under control to the extent reasonable to avoid heavy wind erosion of soils.

**POLICY 5** – The beneficial effects of open space and vegetation on the air resource are to be reflected in the arrangement of land uses depicted on the General Plan. Heavy plantings of trees are encouraged to assist in maintaining oxygen levels.

**POLICY 6** – The need to protect and preserve the air resource within the Planning Area and to reduce levels of vehicle emissions of air pollutants imposes practical limitations on the extent to which the City can depend on the automobile as the principal source of transportation into the next Century.

## ENVIRONMENTAL SETTING

### San Joaquin Valley Air Basin (SJVAB)

The San Joaquin Valley Air Basin (SJVAB) consists of eight counties, stretching from Kern County in the south to San Joaquin County in the north. The SJVAB is bounded by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south.

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The surrounding topographic features restrict air movement through and out of the basin and, as a result, impede the dispersion of pollutants from the basin. Inversion layers are formed in the SJVAB throughout the year. (An inversion layer is created when a mass of warm dry air sits over cooler air near the ground, preventing vertical dispersion of pollutants from the air mass below). During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 2,000 to 2,500 feet above the valley floor. During the winter months, inversions occur from 500 to 1,000 feet above the valley floor (SJVAPCD, 2002).

The pollution potential of the San Joaquin Valley is very high. Surrounding elevated terrain in conjunction with temperature inversions frequently restrict lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in summer are ideal conditions for the formation of photochemical oxidant, and the Valley is a frequent scene of photochemical pollution.

### **Climate**

The SJVAB has an inland Mediterranean climate with warm, dry summers and cooler winters. The average daily maximum temperature in the Basin is 65 degrees Fahrenheit (°F), with average temperature highs of 95 °F in July. Average daily minimum temperature is 48 °F, with average temperature lows of 45 °F in January. Normal rainfall level is approximately 9 inches per year, and occurs mainly in the winter months from November to April. Thunderstorms occur on approximately three to four days in the spring, on average.

San Joaquin County has warm, dry days and relatively cool nights, with clear skies and limited rainfall. Winters are mild with light rains and frequent heavy fog from December to January.

In summer, high temperatures often exceed 100 degrees, with averages in the low 90's in the northern valley and the high 90's in the southern valley. Summer low temperatures average in the high 50's in the northern valley and the upper 60's in the southern valley. The northern end of the Valley (Lathrop, Manteca, and Stockton area) receives approximately 20 inches of rain per year. The central portion of the Valley (Fresno area) receives approximately 10 inches of rain per year. The southern end of the Valley (Bakersfield area) receives less than 6 inches of rain per year.

### **Air Movement**

Marine air comes into the basin from the Sacramento River–San Joaquin River Delta, although most air movement is restricted by the surrounding mountains. Winds from the Bay Area flow northeasterly into the Sacramento Valley and southward into San Joaquin County. This results in weak winds from the north and northeast, with an average speed of seven miles per hour.

Wind speed and direction determine the dispersion of air pollutants. During the summer, wind from the north flows south and southeasterly through the Valley, through the Tehachapi Pass and into the Southeast Desert Air Basin. Thus, emissions from the San Francisco Bay Area and the Broader Sacramento air basins are transported into San Joaquin County and the Valley. Emissions in the San Joaquin Valley are then transported to the Southeast Desert and Great Basin Valley Air Basins. In late fall and winter, cold air from the mountains flows into the Valley. This results in winds from the south that flow north and northwesterly. Some emissions from San Joaquin County are transported to the Broader Sacramento air basin during these times. But the winds are relatively light, limiting the dispersion of CO and other pollutants. Thus, high concentrations of CO remain in the Valley.

### Seasonal Pollution Variations

Carbon monoxide, oxides of nitrogen, particulate matter, and lead particulate concentrations are highest in the late fall and winter when there is little interchange of air between the valley and the coast and when humidity is high following winter rains. This type of weather is associated with radiation fog, known as tule fog, when temperature inversions at ground level persist over the entire valley for several weeks and air movement is virtually absent.

Pollution potential in the San Joaquin County area is relatively high due to the combination of air pollutant emissions sources, transport of pollutants into the area and meteorological conditions that are conducive to high levels of air pollution. Elevated levels of particulate matter (primarily very small particulates or PM<sub>10</sub>) and ground-level ozone are of most concern to regional air quality officials.

Local carbon monoxide “hot spots” are important to a lesser extent. Ground-level ozone, the principal component of smog, is not directly emitted into the atmosphere but is formed by the reaction of reactive organic gases (ROG) and nitrogen oxides (NO<sub>x</sub>) (known as ozone precursor pollutants) in the presence of strong sunlight. Ozone levels are highest in San Joaquin County during late spring through early fall, when weather conditions are conducive and emissions of the precursor pollutants are highest.

Surface-based inversions that form during late fall and winter nights cause localized air pollution problems (PM<sub>10</sub> and carbon monoxide) near the emission sources because of poor dispersion conditions. Emission sources are primarily from automobiles. Conditions are exacerbated during drought-year winters.

### Sunlight

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain original or “primary” pollutants (mainly reactive hydrocarbons and oxides of nitrogen) react to form “secondary” pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind from the emission sources. Because of the prevailing daytime winds and time delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas of the San Joaquin Valley.

### Temperature Inversions

A temperature inversion is a reversal in the normal decrease of temperature as altitude increases. In most parts of the country, air near ground level is warmer than the air above it. Semi-permanent systems of high barometric pressure fronts establish themselves over the basin, deflecting low-pressure systems that might otherwise bring cleansing rain and winds. The height of the base of the inversion is known as the “mixing height” and controls the volume of air available for the mixing and dispersion of air pollutants.

The interrelationship of air pollutants and climatic factors are most critical on days of greatly reduced atmospheric ventilation. On days such as these, air pollutants accumulate because of the simultaneous occurrence of three favorable factors: low inversions, low maximum mixing heights and low wind speeds. Although these conditions may occur throughout the year, the months of July, August and September generally account for more than 40 percent of these occurrences.

The potential for high contaminant levels varies seasonally for many contaminants. During late spring, summer, and early fall, light winds, low mixing heights, and sunshine combine to produce conditions favorable for the maximum production of oxidants, mainly ozone. When strong surface inversions are formed on winter nights, especially during the hours before sunrise, coupled with near-calm winds, carbon

monoxide from automobile exhausts becomes highly concentrated. The highest yearly concentrations of carbon monoxide and oxides of nitrogen are measured during November, December and January.

### CRITERIA AIR POLLUTANTS AND EXISTING AMBIENT AIR QUALITY

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#### Criteria Pollutants

The U.S. Environmental Protection Agency (U.S. EPA) uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). Each criteria pollutant is described below.

**Ozone (O<sub>3</sub>)** is a photochemical oxidant and the major component of smog. While ozone in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of ozone at ground level are a major health and environmental concern. Ozone is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak ozone levels occur typically during the warmer times of the year. Both VOCs and NO<sub>x</sub> are emitted by transportation and industrial sources. VOCs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops and other sources using solvents.

The reactivity of ozone causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of ozone not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to ozone for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

**Carbon monoxide (CO)** is a colorless, odorless and poisonous gas produced by incomplete burning of carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease, particularly those with angina or peripheral vascular disease. Exposure to elevated CO levels can cause impairment of visual perception, manual dexterity, learning ability and performance of complex tasks.

**Nitrogen dioxide (NO<sub>2</sub>)** is a brownish, highly reactive gas that is present in all urban atmospheres. NO<sub>2</sub> can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O<sub>3</sub>) and acid rain, and may affect both terrestrial and aquatic ecosystems. The major mechanism for the formation of NO<sub>2</sub> in the atmosphere is the oxidation of the primary air pollutant nitric oxide. NO<sub>x</sub> plays a major role, together with VOCs, in the atmospheric reactions that produce ozone. NO<sub>x</sub> forms when fuel is burned at high temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

**Sulfur dioxide (SO<sub>2</sub>)** affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO<sub>2</sub> is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. Ambient SO<sub>2</sub>

results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

**Particulate matter (PM)** includes dust, dirt, soot, smoke and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO<sub>2</sub> and VOCs are also considered particulate matter.

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO<sub>2</sub>) and laboratory studies of animals and humans, there are major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death.

Respirable particulate matter (PM<sub>10</sub>) consists of small particles, less than 10 microns in diameter, of dust, smoke, or droplets of liquid which penetrate the human respiratory system and cause irritation by themselves, or in combination with other gases. Particulate matter is caused primarily by dust from grading and excavation activities, from agricultural activities (as created by soil preparation activities, fertilizer and pesticide spraying, weed burning and animal husbandry), and from motor vehicles, particularly diesel-powered vehicles. PM<sub>10</sub> causes a greater health risk than larger particles, since these fine particles can more easily penetrate the defenses of the human respiratory system.

Fine particulate matter (PM<sub>2.5</sub>) consists of fine particles, which are less than 2.5 microns in size. Similar to PM<sub>10</sub>, these particles are primarily the result of combustion in motor vehicles, particularly diesel engines, as well as from industrial sources and residential/agricultural activities such as burning. It is also formed through the reaction of other pollutants. As with PM<sub>10</sub>, these particulates can increase the chance of respiratory disease, and cause lung damage and cancer. In 1997, the EPA created new Federal air quality standards for PM<sub>2.5</sub>.

The major subgroups of the population that appear to be most sensitive to the effects of particulate matter include individuals with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children. Particulate matter also impacts soils and damages materials, and is a major cause of visibility impairment.

**Lead (Pb)** exposure can occur through multiple pathways, including inhalation of air and ingestion of Pb in food, water, soil or dust. Excessive Pb exposure can cause seizures, mental retardation and/or behavioral disorders. Low doses of Pb can lead to central nervous system damage. Recent studies have also shown that Pb may be a factor in high blood pressure and subsequent heart disease.

### Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same

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odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another.

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word “strong” to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

### **Sensitive Receptors**

A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals, schools, daycare facilities, elderly housing, and convalescent facilities.

### **Ambient Air Quality**

Both the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards represent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant.

The federal and California state ambient air quality standards are summarized in Table 5.3-1 for important pollutants. The federal and state ambient standards were developed independently, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter between 2.5 and 10 microns in diameter (PM<sub>10</sub>).

The U.S. Environmental Protection Agency established new national air quality standards for ground-level ozone and for fine particulate matter in 1997. The 1-hour ozone standard was phased out and replaced by an 8-hour standard of 0.075 PPM. Implementation of the 8-hour standard was delayed by litigation, but was determined to be valid and enforceable by the U.S. Supreme Court in a decision issued in February of 2001. In April 2005, the Air Resources Board approved a new eight-hour standard of 0.070 ppm and retained the one-hour ozone standard of 0.09 after an extensive review of the scientific literature. The U.S. EPA signed a final rule for the Federal ozone eight-hour standard of 0.070 ppm on October 1, 2015, and was effective as of December 28, 2015.

**TABLE 5.3-1: FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS**

POLLUTANT	AVERAGING TIME	FEDERAL PRIMARY STANDARD	STATE STANDARD
Ozone	1-Hour	--	0.09 ppm
	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.03 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	Annual	0.03 ppm	--
	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
PM <sub>10</sub>	Annual	--	20 ug/m <sup>3</sup>
	24-Hour	150 ug/m <sup>3</sup>	50 ug/m <sup>3</sup>
PM <sub>2.5</sub>	Annual	12 ug/m <sup>3</sup>	12 ug/m <sup>3</sup>
	24-Hour	35 ug/m <sup>3</sup>	--
Lead	30-Day Avg.	--	1.5 ug/m <sup>3</sup>
	3-Month Avg.	0.15 ug/m <sup>3</sup>	--

NOTES: PPM = PARTS PER MILLION,  $\mu\text{G}/\text{M}^3$  = MICROGRAMS PER CUBIC METER

SOURCES: CALIFORNIA AIR RESOURCES BOARD, 2017A.

In 1997, new national standards for fine particulate matter diameter 2.5 microns or less (PM<sub>2.5</sub>) were adopted for 24-hour and annual averaging periods. The current PM<sub>10</sub> standards were to be retained, but the method and form for determining compliance with the standards were revised.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing air quality concerns within the project area is related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles which account for 70 percent of the ozone in the region. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

### Attainment Status

In accordance with the California Clean Air Act (CCAA), the CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria.

Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

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The U.S. EPA designates areas for ozone, CO, and NO<sub>2</sub> as “does not meet the primary standards,” “cannot be classified,” or “better than national standards.” For SO<sub>2</sub>, areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,” “cannot be classified,” or “better than national standards.” However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

San Joaquin County has a State designation of Nonattainment for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> and is either Unclassified or Attainment for all other criteria pollutants. The County has a national designation of Nonattainment for O<sub>3</sub> and PM<sub>2.5</sub>. The County is designated either attainment or unclassified for the remaining national standards. Table 5.3-2 presents the State and national attainment status for San Joaquin County.

**TABLE 5.3-2: STATE AND NATIONAL ATTAINMENT STATUS**

CRITERIA POLLUTANTS	STATE DESIGNATIONS	NATIONAL DESIGNATIONS
Ozone	Nonattainment	Nonattainment
PM <sub>10</sub>	Nonattainment	Attainment
PM <sub>2.5</sub>	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	
Lead	Attainment	
Hydrogen Sulfide	Unclassified	
Visibility Reducing Particles	Unclassified	

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AREA DESIGNATIONS MAPS / STATE AND NATIONAL), 2017B.

### San Joaquin Valley Air Basin Monitoring

The SJVAB consists of eight counties, from San Joaquin County in the north to Kern County in the south. SJVAPCD and CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure O<sub>3</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>. It is important to note that the Federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for Federal standards. Data obtained from the monitoring sites throughout the SJVAB between 2014 and 2016 is summarized in Tables 5.3-3 through 5.3-5.

**TABLE 5.3-3: SJVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - OZONE**

Year	Days > Standard				1-Hour Observations			8-Hour Averages				Year Coverage	
	State		National		Max.	State	Nat'l	State		National		Min	Max
	1-Hr	8-Hr	1-Hr	8-Hr		D.V. <sup>1</sup>	D.V. <sup>2</sup>	Max.	D.V. <sup>1</sup>	Max.	D.V. <sup>2</sup>		
2016	28	91	1	60	0.131	0.12	0.117	0.101	0.103	0.101	0.098	93	100
2015	24	74	1	55	0.135	0.12	0.116	0.110	0.103	0.110	0.099	84	99
2014	26	88	1	56	0.128	0.12	0.118	0.105	0.108	0.104	0.104	83	100

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. THE NATIONAL 1-HOUR OZONE STANDARD WAS REVOKED IN JUNE 2005 AND IS NO LONGER IN EFFECT. STATISTICS RELATED TO THE REVOKED STANDARD ARE SHOWN IN ITALICS. D.V.<sup>1</sup> = STATE DESIGNATION VALUE. D.V.<sup>2</sup> = NATIONAL DESIGN VALUE.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR IADAM) AIR POLLUTION SUMMARIES.



**TABLE 5.3-4: SJVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM<sub>2.5</sub>**

Year	Est. Days > Nat'l '06 Std.	Annual Average		Nat'l Ann. Std. D.V. <sup>1</sup>	State Annual D.V. <sup>2</sup>	Nat'l '06 Std. 98th Percentile	Nat'l '06 24-Hr Std. D.V. <sup>1</sup>	High 24-Hour Average		Year Coverage	
		Nat'l	State					Nat'l	State	Min.	Max.
2016	25.5	15.9	15.6	18.4	19	51.4	72	66.4	66.4	86	100
2015	38.0	17.9	17.9	20.8	19	99.2	77	107.8	111.9	32	100
2014	40.4	21.6	18.6	19.7	19	107.2	71	107.2	107.2	32	100

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA. D.V.<sup>1</sup> = STATE DESIGNATION VALUE. D.V.<sup>2</sup> = NATIONAL DESIGN VALUE.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR IADAM) AIR POLLUTION SUMMARIES.

**TABLE 5.3-5: SJVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM<sub>10</sub>**

Year	Est. Days > Std.		Annual Average		3-Year Average		High 24-Hr Average		Year Coverage
	Nat'l	State	Nat'l	State	Nat'l	State	Nat'l	State	
2016	0.0	157.9	50.0	47.3	46	48	152.2	132.5	100
2015	0.0	121.4	59.3	44.1	47	48	143.3	140.3	100
2014	8.4	138.8	57.9	47.5	45	48	430.1	419.5	100

NOTES: THE NATIONAL ANNUAL AVERAGE PM<sub>10</sub> STANDARD WAS REVOKED IN DECEMBER 2006 AND IS NO LONGER IN EFFECT. AN EXCEEDANCE IS NOT NECESSARILY A VIOLATION. STATISTICS MAY INCLUDE DATA THAT ARE RELATED TO AN EXCEPTIONAL EVENT. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. NATIONAL STATISTICS ARE BASED ON STANDARD CONDITIONS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR IADAM) AIR POLLUTION SUMMARIES.

### San Joaquin County Air Quality Monitoring

SJVAPCD and CARB maintain two air quality monitoring sites in San Joaquin County that collect data for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. These include the Stockton - Hazelton Street and Tracy – Airport monitoring sites. The Federal ozone 1-hour standard was revoked by the EPA in 2005, but subsequent litigation reinstated portions of implementation requirements under the revoked standard. As a result, the SJVAPCD adopted the 2013 Plan for the Revoked 1-Hour Ozone Standard in September 2013 to address the reinstated requirements for this standard. Data obtained from the monitoring sites between 2014 through 2016 is shown in Tables 5.3-6 and 5.3-7.

**TABLE 5.3-6: AMBIENT AIR QUALITY MONITORING DATA (STOCKTON – HAZELTON STREET)**

Pollutant	Cal.	Fed.	Year	Max Concentration	Days Exceeded State/Fed Standard
	Primary Standard				
Ozone (O <sub>3</sub> ) (1-hour)	0.09 ppm for 1 hour	NA	2016	0.102	2 / (N/A)
			2015	0.094	0 / (N/A)
			2014	0.090	0 / (N/A)
Ozone (O <sub>3</sub> ) (8-hour)	0.07 ppm for 8 hour	0.07 ppm for 8 hour	2016	0.079	2 / 2
			2015	0.079	3 / 2
			2014	0.078	5 / 4
Particulate Matter (PM <sub>10</sub> )	50 ug/m <sup>3</sup> for 24 hours	150 ug/m <sup>3</sup> for 24 hours	2016	66.5	30.6 / 0
			2015	55.3	24.5 / 0

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Pollutant	Cal.	Fed.	Year	Max Concentration	Days Exceeded State/Fed Standard
	Primary Standard				
			2014	94.0	18.0 / 0
Fine Particulate Matter (PM <sub>2.5</sub> )	No 24 hour State Standard	35 ug/m <sup>3</sup> for 24 hours	2016	43.7	(N/A) / 4.0
			2015	58.8	(N/A) / 12.2
			2014	56.8	(N/A) / 16.0

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR IADAM) AIR POLLUTION SUMMARIES.

**TABLE 5.3-7: AMBIENT AIR QUALITY MONITORING DATA (TRACY – AIRPORT)**

Pollutant	Cal.	Fed.	Year	Max Concentration	Days Exceeded State/Fed Standard
	Primary Standard				
Ozone (O <sub>3</sub> ) (1-hour)	0.09 ppm for 1 hour	NA	2016	0.109	4 / (N/A)
			2015	0.107	4 / (N/A)
			2014	0.097	1 / (N/A)
Ozone (O <sub>3</sub> ) (8-hour)	0.07 ppm for 8 hour	0.070 ppm for 8 hour	2016	0.084	19 / 19
			2015	0.083	21 / 19
			2014	0.098	17 / 16
Particulate Matter (PM <sub>10</sub> )	50 ug/m <sup>3</sup> for 24 hours	150 ug/m <sup>3</sup> for 24 hours	2016	53.0	* / *
			2015	58.3	* / *
			2014	67.7	* / *
Fine Particulate Matter (PM <sub>2.5</sub> )	No 24 hour State Standard	35 ug/m <sup>3</sup> for 24 hours	2016	28.5	* / *
			2015	39.0	* / *
			2014	36.8	* / *

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR IADAM) AIR POLLUTION SUMMARIES.

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## 5.4 GREENHOUSE GASES AND CLIMATE CHANGE

### Greenhouse Gases and Climate Change Linkages

Various gases in the Earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring greenhouse gases include water vapor (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and ozone (O<sub>3</sub>). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three greenhouse gases have increased globally by 40, 150, and 20 percent, respectively (IPCC, 2013).

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), ozone (O<sub>3</sub>), water vapor, nitrous oxide (N<sub>2</sub>O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by the industrial sector (California Energy Commission, 2017).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced 440 million gross metric tons of carbon dioxide equivalents (MMTCO<sub>2</sub>e) in 2015 (California Energy Commission, 2017). By 2020, California is projected to produce 509 MMTCO<sub>2</sub>e per year (California Air Resources Board, 2015).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO<sub>2</sub> were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2015, accounting for 39% of total GHG emissions in the state. This category was followed by the industrial sector (23%), the electricity generation sector (including both in-state and out-of-state sources) (19%), the agriculture sector (8%), the residential energy consumption sector (6%), and the commercial energy consumption sector (5%) (California Energy Commission, 2017).

### **Effects of Global Climate Change**

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 50% to 75% by the end of the 21<sup>st</sup> century (National Resources Defense Council, 2014). This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (California Environmental Protection Agency, 2010). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands. As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (California Environmental Protection Agency, 2010), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

#### *PUBLIC HEALTH*

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25% to 35% under the lower warming range and to 75% to 85% under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

#### *WATER RESOURCES*

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25% of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70% to 90%. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

### *AGRICULTURE*

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

### *FORESTS AND LANDSCAPES*

Global warming is expected to alter the distribution and character of natural vegetation thereby resulting in a possible increased risk of large wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55%, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation

## 5.0 CONSERVATION AND NATURAL RESOURCES

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conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30% toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90%.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60% to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

### *RISING SEA LEVELS*

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

### **Energy Consumption**

Energy in California is consumed from a wide variety of sources. Fossil fuels (including gasoline and diesel fuel, natural gas, and energy used to generate electricity) are most widely used form of energy in the State. However, renewable source of energy (such as solar and wind) are growing in proportion to California's overall energy mix. A large driver of renewable sources of energy in California is the State's current Renewable Portfolio Standard (RPS), which requires the State to derive at least 33% of electricity generated from renewable resources by 2020, and 50 percent by 2030.

Overall, in 2013, California's per capita energy usage was ranked 48<sup>th</sup> in the nation (U.S. Energy Information Administration, 2016). Additionally, California's per capita rate of energy usage has remained relatively constant since the 1970's. Many State regulations since the 1970's, including new building energy efficiency standards, vehicle fleet efficiency measures, as well as growing public awareness, have helped to keep per capita energy usage in the State in check.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately result in global climate change. Other fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

### *ELECTRICITY CONSUMPTION*

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. In 2016, more than one-fourth of the electricity supply comes from facilities outside of the state. Much of the power delivered to California from states in the Pacific Northwest was generated by wind. States in the Southwest delivered power generated at coal-fired power plants, at natural gas-fired power plants, and from nuclear generating stations (U.S. EIA, 2017a) In 2016, approximately 50 percent of California's utility-scale net electricity generation was fueled by natural gas. In addition, about 25 percent of the state's utility-scale net electricity generation came from non-hydroelectric renewable technologies, such as solar, wind, geothermal, and biomass. Another 14 percent of the state's utility-scale net electricity generation came from hydroelectric generation, and nuclear energy powered an additional 11 percent. The amount of electricity generated from coal negligible (approximately 0.2 percent) (U.S. EIA, 2017a). The percentage of renewable resources as a

proportion of California's overall energy portfolio is increasing over time, as directed the State's Renewable Portfolio Standard (RPS).

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (U.S. EIA, 2017b). Statewide consumption was 290,567 GWh in 2016, an annual growth rate of 0.8 percent between 1997 and 2016. The Sacramento Area Council of Governments (SACOG) region consumed approximately 17,948 GWh in 2014, roughly 6.7 percent of the state total (SACOG, 2016). The SACOG region includes the counties of El Dorado, Placer, Sacramento, Sutter, Yolo and Yuba as well as the 22 cities within these six counties.

### *OIL*

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2016, world consumption of oil had reached 96 million barrels per day. The United States, with approximately five percent of the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day (International Energy Agency, 2018). The transportation sector relies heavily on oil. In California, petroleum-based fuels currently provide approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2012).

### *NATURAL GAS/PROPANE*

The state produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2012). Total natural gas demand in California in 2012 was 2,313, billion cubic feet of natural gas (California Energy Commission, 2012).

## REGULATORY FRAMEWORK

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### *FEDERAL*

#### **Clean Air Act**

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor National Ambient Air Quality Standards (NAAQS) vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

### **Energy Policy and Conservation Act**

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the United States would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

### **Energy Policy Act of 1992 (EPAct)**

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

### **Energy Policy Act of 2005**

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

### **Intermodal Surface Transportation Efficiency Act (ISTEA)**

ISTEA (49 U.S.C. § 101 et seq.) promoted the development of intermodal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that metropolitan planning organizations (MPOs), such as SACOG, were to address in developing transportation plans and programs, including some energy-related factors. To meet the ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process was then to address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption was expected to become a criterion, along with cost and other values that determine the best transportation solution.



### **Moving Ahead for Progress in the 21<sup>st</sup> Century (Map-21)**

MAP-21, the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), was signed into law on July 6, 2012. Funding surface transportation programs at over \$105 billion for fiscal years (FY) 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005. MAP-21 creates a streamlined, performance-based, and multimodal program to address the many challenges facing the U.S. transportation system. These challenges include improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery.

### **Federal Climate Change Policy**

According to the EPA, “the United States government has established a comprehensive policy to address climate change” that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, “the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science.” The EPA administers multiple programs that encourage voluntary GHG reductions, including “ENERGY STAR”, “Climate Leaders”, and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

### **Mandatory Greenhouse Gas Reporting Rule**

On September 22, 2009, the U.S. EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement was designed to provide the U.S. EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO<sub>2</sub> per year. This publicly available data allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. An estimated 85% of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

#### *STATE*

### **Assembly Bill 1493**

In response to Assembly Bill (AB) 1493, the CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California’s existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

The CARB requested a waiver of federal preemption of California’s Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the regulation amendments to the

## 5.0 CONSERVATION AND NATURAL RESOURCES

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CCRs that fulfill the requirements of AB 1493. The U.S. EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

### **Assembly Bill 1007**

AB 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

### **Bioenergy Action Plan – Executive Order #S-06-06**

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

### **California Executive Orders S-3-05, S-20-06, and B-30-15, Assembly Bill 32, and Senate Bill 32**

On June 1, 2005, then Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80% below the 1990 levels by the year 2050.

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that the CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

In April 2015, Governor Jerry Brown signed Executive Order B-30-15, which requires that there be a reduction in GHG emissions to 40% below 1990 levels by 2030. This intermediate target was codified into law by Senate Bill 32 (SB 32), which was signed into law on September 8, 2016.

### **Climate Change Scoping Plan**

On December 11, 2008, the CARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of the CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO<sub>2</sub>e emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO<sub>2</sub>e under a business-as-usual scenario. (This is a reduction of 42 MMT CO<sub>2</sub>e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions the CARB recommends for each emissions sector of the

state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO<sub>2</sub>e),
- the Low-Carbon Fuel Standard (15.0 MMT CO<sub>2</sub>e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO<sub>2</sub>e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO<sub>2</sub>e).

The CARB updated the Scoping Plan in 2013 (*First Updated to the Scoping Plan*) and again in 2017 (the *Final Scoping Plan*). The 2013 Update built upon the initial Scoping Plan with new strategies and recommendations, and also set the groundwork to reach the long-term goals set forth by the state. The 2017 Update expands the scope of the plan further by focusing on the strategy for achieving the state's 2030 GHG target of 40 percent emissions reductions below 1990 levels (to achieve the target codified into law by SB 32).

### **California Strategy to Reduce Petroleum Dependence (AB 2076)**

In response to the requirements of AB 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

### **Climate Action Program at Caltrans**

The California Department of Transportation, Business, Transportation, and Housing Agency, prepared a Climate Action Program in response to new regulatory directives. The goal of the Climate Action Program is to promote clean and energy efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and CO<sub>2</sub> from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

The reasoning underlying the Climate Action Program is the conclusion that “the most effective approach to addressing GHG reduction, in the short-to-medium term, is strong technology policy and market mechanisms to encourage innovations. Rapid development and availability of alternative fuels and vehicles, increased efficiency in new cars and trucks (light and heavy duty), and super clean fuels are the most direct approach to reducing GHG emissions from motor vehicles (emission performance standards and fuel or carbon performance standards).”

### **Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)**

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard is incorporated into the State Alternative Fuels Plan and is one of the proposed discrete early action GHG reduction measures identified by the CARB pursuant to AB 32.

### **Senate Bill 97**

SB 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

### **Senate Bill 375**

SB 375 (Stats. 2008, ch. 728) (SB 375) was built on AB 32 (California's 2006 climate change law). SB 375's core provision is a requirement for regional transportation agencies to develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the Regional Transportation Plan (RTP).

The SCS outlines the region's plan for combining transportation resources, such as roads and mass transit, with a realistic land use pattern, in order to meet a state target for reducing GHG emissions. The strategy must take into account the region's housing needs, transportation demands, and protection of resource and farmlands.

Additionally, SB 375 modified the state's Housing Element Law to achieve consistency between the land use pattern outlined in the SCS and the Regional Housing Needs Assessment allocation. The legislation also substantially improved cities' and counties' accountability for carrying out their housing element plans.

Finally, SB 375 amended the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) to ease the environmental review of developments that help reduce the growth of GHG emissions.

### **California Building Energy Efficiency Standards**

Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards, was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. On January 1, 2010, the California Building Standards Commission adopted CALGreen and became the first state in the United States to adopt a statewide green building standards code. CALGreen requires new buildings to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials. The California Building Energy Efficiency Standards are updated periodically. The standards were most recently updated in 2016, and have are effective as of January 1, 2017.

### **CEQA Guidelines Appendix F**

In order to assure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on

avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. The goal of conserving energy implies the wise and efficient use of energy.

### *LOCAL*

#### **San Joaquin Valley Air Pollution Control District Climate Change Action Plan**

In August 2008, the SJVAPCD adopted its Climate Change Action Plan. The Climate Change Action Plan directed the SJVAPCD's Air Pollution Control Officer to develop guidance to assist APCD staff, Valley businesses, land use agencies and other permitting agencies in addressing GHG emissions as part of the CEQA process. Regarding CEQA guidance, some of the goals of the Climate Change Action Plan are to assist local land use agencies, developers and the public by identifying and quantifying GHG emission reduction measures for development projects and by providing tools to streamline evaluation of project-specific GHG effects, and to assist Valley businesses in complying with State law related to GHG emissions.

A product of this direction to provide CEQA guidance is the Final Staff Report – Climate Change Action Plan: Addressing GHG Emissions Impacts, presented to the APCD Board in December 2009. A central component of the Final Staff Report is the establishment of Best Performance Standards, which are specifications or project design elements that identify effective, feasible GHG emission reduction measures. Emission reductions achieved through Best Performance Standards implementation would be pre-quantified, thus negating the need for project-specific quantification of GHG emissions.

For projects not implementing Best Performance Standards, demonstration of a 29% reduction in GHG emissions from business-as-usual conditions is required to determine that a project would have a less than cumulatively significant impact. Appendix J of the Final Staff Report provides a table of GHG emission reduction measures for development projects, along with a point value that corresponds to a percentage decrease in GHG emissions when available.

#### **San Joaquin County Regional Transportation Plan/Sustainable Communities Strategy (SCS/RTP)**

The 2014 San Joaquin County Regional Transportation Plan, which has been named “Valley Visions San Joaquin,” was the first RTP in San Joaquin County to contain a SCS, the result of the Sustainable Communities and Climate Protection Act of 2008 (i.e., SB 375). The SCS coordinates future transportation investments and land use strategies to prioritize a multi-modal investment plan covering a 27-year period extending out to 2040. An update to the 2014 RTP/SCS was adopted in June 2018 (the 2018 RTP/SCS).

The RTP is a long-range transportation plan that guides the region’s transportation improvements over a minimum of 20-years and is updated every four. Using growth forecasts and economic trends projected out over study timeframe, the RTP considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address our mobility needs. The RTP addresses all transportation modes including motor vehicles, transit (commuter and local), rail (commuter and inter-regional), goods movement (rail, truck, and water), bicycle and pedestrian facilities, aviation systems, transportation systems management (TSM) and transportation demand management (TDM) programs, and other projects considered over the

## 5.0 CONSERVATION AND NATURAL RESOURCES

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planning horizon of 2042. Regional transportation improvement projects proposed to be funded, in whole or in part, in the state transportation improvement program must be included in the adopted RTP.

The eight counties of the San Joaquin Valley are coordinating on some aspects of these planning efforts to maximize resources, with each area's Metropolitan Planning Organization (MPO) developing a separate plan. MPOs are responsible for setting transportation policy and priorities for a region and documenting how transportation funds will be spent in a Regional Transportation Plan. The policies contained in the 2018 RTP/SCS are as follows:

- Enhance the Environment for Existing and Future Generations and Conserve Energy
- Maximum Mobility and Accessibility
- Increase Safety and Security
- Preserve the Efficiency of the Existing Transportation System
- Support Economic Vitality
- Promote Interagency Coordination and Public Participation for Transportation Decision-Making and Planning Efforts
- Maximize Cost-Effectiveness
- Improve the Quality of Life for Residents

The Greenhouse Gas Reduction Targets for the 2018 San Joaquin County RTP are as follows:

- 5% per capita reduction from 2005 levels by 2020
- 10% per capita reduction from 2005 levels by 2035

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### 5.5 GEOLOGY, SOILS, AND SEISMICITY

This section addresses seismic and geologic hazards in the City of Lathrop. For hazards relating to flooding, wildfire, and hazardous materials see Section 4.0 (Hazards, Safety, and Noise)

#### REGULATORY FRAMEWORK

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##### *STATE*

The State of California has established a variety of regulations and requirements related to seismic safety and structural integrity, including the California Building Standards Code, the Alquist-Priolo Earthquake Fault Zoning Act, and the Seismic Hazards Mapping Act.

##### **California Building Standards Code**

Title 24 of the California Code of Regulations, known as the California Building Standards Code (CBSC) or simply "Title 24," contains the regulations that govern the construction of buildings in California. The CBSC includes 12 parts: California Building Standards Administrative Code, California Building Code, California Residential Building Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Historical Building Code, California Fire Code, California Existing Building Code, California Green Building Standards Code (CALGreen Code), and the California Reference Standards Code. Through the CBSC, the State provides a minimum standard for building design and construction. The CBSC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control.

The California Building Code, Title 24, Part 2, Chapter 16 addresses structural design, Chapter 17 addresses structural tests and special inspections, and Chapter 18 addresses soils and foundations. Section 1610 provides structural design standards for foundation walls and retaining walls to ensure resistance to lateral soil loads. Section 1613 provides structural design standards for earthquake loads. Section 1704.7 requires special inspections for existing site soil conditions, fill placement and load-bearing requirements during the construction as specified in Table 1704.7 of this section. Sections 1704.8 through 1704.16 provide inspection and testing requirements for various foundation types, and construction material types. Section 1803.1.1.1 requires each city and county enact an ordinance which requires a preliminary soil report and that the report be based upon adequate test borings or excavations, of every subdivision, where a tentative and final map is required pursuant to Section 66426 of the Government Code. Section 1803.5.3 defines expansive soils and specifies that in areas likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist. Section 1803.5.4 specifies that a subsurface soil investigation must be performed to determine whether the existing ground-water table is above or within 5 feet (1524 mm) below the elevation of the lowest floor level where such floor is located below the finished ground level adjacent to the foundation. Section 1803.5.8 provides specific standards where shallow foundations will bear on compacted fill material more than 12 inches (305 mm) in depth. Sections 1803.5.11 and 1803.5.12 provide requirements for geotechnical investigations for structures assigned varying Seismic Design Categories in accordance with Section 1613. Section 1804 provides standards and requirements for excavation, grading, and fill. Sections 1808, 1809, and 1810 provide standards and requirements for the construction of varying foundations.



### **Alquist-Priolo Earthquake Fault Zoning Act**

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 sets forth the policies and Criteria of the State Mining and Geology Board, which governs the exercise of governments' responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. The policies and criteria are limited to potential hazards resulting from surface faulting or fault creep within Earthquake Fault Zones, as delineated on maps officially issued by the State Geologist. Working definitions include:

- Fault – a fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side;
- Fault Zone – a zone of related faults, which commonly are braided and sub parallel, but may be branching and divergent. A fault zone has a significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles;
- Sufficiently Active Fault – a fault that has evidence of Holocene surface displacement along one or more of its segments or branches (last 11,000 years); and
- Well-Defined Fault – a fault whose trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The geologist should be able to locate the fault in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

“Sufficiently Active” and “Well Defined” are the two criteria used by the State to determine if a fault should be zoned under the Alquist-Priolo Act.

### **Seismic Hazards Mapping Act**

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. Under the Act, seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act (which addresses only surface fault-rupture hazards) and are outlined below:

The State Geologist is required to delineate the various “seismic hazard zones.”

- Cities and Counties, or other local permitting authority, must regulate certain development “projects” within the zones. They must withhold the development permits for a site within a zone until the geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development plans.
- The State Mining and Geology Board provides additional regulations, policies, and criteria, to guide cities and counties in their implementation of the law. The Board also provides guidelines for preparation of the Seismic Hazard Zone Maps and for evaluating and mitigating seismic hazards.

- Sellers (and their agents) of real property within a mapped hazard zone must disclose that the property lies within such a zone at the time of sale.

### **Caltrans Seismic Design Criteria**

The California Department of Transportation (Caltrans) has Seismic Design Criteria (SDC), which is an encyclopedia of new and currently practiced seismic design and analysis methodologies for the design of new bridges in California. The SDC adopts a performance-based approach specifying minimum levels of structural system performance, component performance, analysis, and design practices for ordinary standard bridges. The SDC has been developed with input from the Caltrans Offices of Structure Design, Earthquake Engineering and Design Support, and Materials and Foundations. Memo 20-1 outlines the bridge category and classification, seismic performance criteria, seismic design philosophy and approach, seismic demands and capacities on structural components and seismic design practices that collectively make up Caltrans' seismic design methodology.

### *LOCAL*

### **City of Lathrop General Plan**

The existing Lathrop General Plan includes the following policies and implementation measures related to geology and soils:

#### **GOAL NO. 7 - SEISMIC HAZARDS**

Goals for achieving and maintaining safety from seismic events include preventing serious injury, loss of life, serious damage to critical facilities involving large assemblies of people, and loss of continuity in providing services.

#### **Part VI: Hazard Management Element**

##### **Seismic Goals and Policies**

1. Inventory all buildings which are unsound under conditions of "moderate" seismic activity; buildings having questionable structural resistance should be considered for either rehabilitation or demolition. Structures determined by the City's Building Official to be structurally unsound are to be reported to the owner and recorded with the County Recorder to insure that future owners are made aware of hazardous conditions and risks.
2. All new building construction shall conform to the latest seismic requirements of the Uniform Building Code as a minimum standard.
3. The present building height limit of 50 feet shall be maintained, with a maximum of four stories. This policy should stay in force until such time that high rise construction is desired and capability for evacuation and fire fighting in upper stories is possible through the availability of appropriate equipment. For Sub-Plan Area #3, at that time the maximum building height limit shall be 125 feet, with a maximum of ten stories.
4. Facilities necessary for emergency service should be capable of withstanding a maximum credible earthquake and remain operational to provide emergency response.

5. Preliminary soil compaction tests and geotechnical analysis of soil conditions shall be submitted as part of the justification for development proposals contained in any Specific Plan.
6. Soil compaction tests, and geotechnical analysis of soil conditions and behavior under seismic conditions shall be required of all subdivisions and of all commercial, industrial and institutional structures over 6,000 square feet in area (or in the case of institutional structures, those which hold 100 or more people).
7. A preliminary soils report is to be prepared by a registered geo-technical engineer for any residential development project, based upon adequate test borings. If the report indicates the presence of critically expansive soils or other soil problems which, if not corrected, would lead to structural defects, the developer shall provide for and submit the findings of a soil investigation of each non-residential lot or housing site proposed. The soil investigation shall be prepared by a state-registered civil engineer and shall recommend corrective action likely to prevent structural damage to each dwelling to be constructed. Prior to the issuance of a building permit, any recommended action approved by the Building Official shall be incorporated into the construction of each dwelling.
8. A preliminary geologic report, prepared by a state-certified engineering geologist and based on adequate test borings, shall be submitted to the Building Official for every subdivision, planned development or other residential project at the time of submitting a tentative map or other type of development application to the City.
9. If the preliminary geologic report indicates the presence of critically expansive soils or other soil problems (e.g., potential for liquefaction which if not corrected could lead to structural defects, the developer shall provide such additional soils investigation for each development site as may be requested by the Building Official. The geologic investigation shall be prepared by a state-certified engineering geologist and shall, recommend further corrective action likely to prevent structural damage to dwelling units. Prior to the issuance of a building permit, any recommended action approved by the Building Official shall be incorporated into site preparation and the construction of each dwelling.
10. The provisions of policy nos. 6 - 9, above, shall be applicable to all commercial, industrial, institutional and public development projects.
11. The City should adopt an Earthquake Disaster Plan in coordination with San Joaquin County and local special districts. The Plan should identify hazards that may occur as the result of an earthquake of major magnitude. The Plan should be sufficiently broad in scope to include the designation of evacuation routes and means to coordinate all local government agencies in assisting local residents in the event of a major earthquake, large-scale fire or explosion, or hazardous chemical spill or release of hazardous air-borne gas.
12. All lines which are part of the domestic water distribution system should be looped to assure adequate pressure in the event of major fire, earthquake, or explosion. Emergency standby power generation capability should be available at all water wells to assure water availability in the event of a major power failure.

### GEOLOGIC SETTING

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#### **Regional Geology**

The Planning Area lies in the San Joaquin Valley in central California. The San Joaquin Valley is located in the southern portion of the Great Valley Geomorphic Province. The Great Valley, also known as the Central Valley, is a topographically flat, northwest-trending, structural trough (or basin) about 50 miles wide and 450 miles long. It is bordered by the Tehachapi Mountains on the south, the Klamath Mountains on the north, the Sierra Nevada on the east, and the Coast Ranges on the west.

The San Joaquin Valley is filled with thick sedimentary rock sequences that were deposited as much as 130 million years ago. Large alluvial fans have developed on each side of the Valley. The larger and more gently sloping fans are on the east side of the San Joaquin Valley, and overlie metamorphic and igneous basement rocks. These basement rocks are exposed in the Sierra Nevada foothills and consist of meta-sedimentary, volcanic, and granitic rocks.

#### **Local Setting**

##### *TOPOGRAPHY*

The Planning Area is relatively flat with natural gentle slope from east to west. The city's topography has an average elevation of approximately 20 feet above sea level. Figure 5.5-1 shows the USGS Lathrop Quadrangle Topographic view.

##### *SOILS*

A Custom Soil Survey was completed for the Planning Area using the NRCS Web Soil Survey program. The NRCS Soils Map is provided in Figure 5.5-2. Table 5.5-1 below identifies the type and range of soils found in the Planning Area.

TABLE 5.5-1: PLANNING AREA SOILS

NAME	ACRES	PERCENT OF AOI
Bigani loamy coarse sand, partially drained, 0 to 2 percent slopes	162.1	1%
Boggiano clay loam, 0 to 2 percent slopes	5.4	0%
Columbia fine sandy loam, channeled, partially drained, 0 to 2 percent slopes, frequently flooded	79.8	1%
Columbia fine sandy loam, clayey substratum, partially drained, 0 to 2 percent slopes	1,385.8	10%
Columbia fine sandy loam, drained, 0 to 2 percent slopes	127.0	1%
Columbia fine sandy loam, partially drained, 0 to 2 percent slopes, occasionally flooded	328.7	2%
Delhi loamy sand, 0 to 2 percent slopes, MLRA 17	226.3	2%
Dello clay loam, drained, 0 to 2 percent slopes, overwashed	109.3	1%
Dello loamy sand, drained, 0 to 2 percent slopes	50.5	0%
Dello sand, partially drained, 0 to 2 percent slopes, occasionally flooded	14.5	0%
Dello sandy loam, clayey substratum, drained, 0 to 2 percent slopes	267.5	2%
Egbert silty clay loam, partially drained, 0 to 2 percent slopes	2,356.8	17%
Grangeville clay loam, partially drained, 0 to 2 percent slopes	330.5	2%
Grangeville fine sandy loam, partially drained, 0 to 2 percent slopes	333.1	2%
Guard clay loam, drained, 0 to 2 percent slopes	148.9	1%
Honcut sandy loam, 0 to 2 percent slopes	17.1	0%
Manteca fine sandy loam, 0 to 2 percent slopes	653.2	5%
Merritt silty clay loam, partially drained, 0 to 2 percent slopes	1,266.0	9%
Merritt silty clay loam, partially drained, 0 to 2 percent slopes, occasionally flooded	307.7	2%
Scribner clay loam, partially drained, 0 to 2 percent slopes	121.0	1%
Timor loamy sand, 0 to 2 percent slopes	471.9	3%
Tinnin loamy coarse sand, 0 to 2 percent slopes	1,588.5	12%
Urban land	1,164.7	9%
Valdez silt loam, organic substratum, partially drained, 0 to 2 percent slopes	66.5	0%
Veritas fine sandy loam, 0 to 2 percent slopes	1,560.8	11%
Water	433.7	3%
Total	13,577.3	100%

SOURCE: NRCS CUSTOM SOIL SURVEY 2018.

As shown in Table 5.5-1, the majority of soils within the Planning Area consist of course and fine sands and sandy loams. Below is a brief description of the most prominent soils within the Planning Area.

**Columbia fine sandy loam, clayey substratum, partially drained.** The Columbia series consists of deep, moderately well drained soils formed in alluvium from mixed sources. These soils are on flood plains and natural levees. The mean annual precipitation is 12 to 25 inches, (305 to 635 mm) and the mean annual temperature is about 61 degrees F, (16 degrees C). These soils are used for irrigated hay, small grain, and

## 5.0 CONSERVATION AND NATURAL RESOURCES

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orchard and row crops. Vegetation consists of a fairly dense cover of oaks, cottonwoods, willows, vines, shrubs and grasses near stream channels, but more open away from the channels. These soils occur in the central valley of California. The soils are moderately extensive.

**Merritt silty clay loam, partially drained.** Merritt soils are on nearly level recent alluvial fans and flood plains at elevations of 5 feet below sea level to 60 feet above. The Merritt series consists of deep, poorly drained soils formed in alluvium from sedimentary rocks. Generally the soils are poorly drained; slow runoff; and have moderately slow permeability. Merritt soils are accoated with recent alluvial fans and flood plains and have slopes of 0 to 2 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 60 degrees F. The soils under intensive cultivation and are irrigated, producing a wide variety of field and row crops.

**Egbert silty clay loam, partially drained.** This very deep, poorly drained, nearly level soil formed in alluvium. Permeability is slow in this soil. Runoff is slow, and the hazard of water erosion is slight. The shrink-swell potential of this soil is moderate to high. The risk of corrosion is high for uncoated steel, and moderate for concrete. Soil limitations on building site development are considered moderate to severe, due to shrink-swell and flooding potential.

**Manteca fine sandy loam.** This moderately well drained, nearly level soil formed in alluvium. Permeability is moderate in this soil. Runoff is slow, and the hazard of water erosion is slight. The shrink-swell potential of this soil is low. The risk of corrosion is high for uncoated steel, and low for concrete. Soil limitations on building site development are considered moderate to severe, due to flooding potential and the existence of cemented pan.

**Tinnin loamy coarse sand.** This series consists of well drained soils on low fan terraces and alluvial fans. These soils are very deep, and form in alluvium derived from granitic rock sources. Slopes range from 0 to 2 percent. This series is characterized as well draining, slow runoff, and rapid permeability. Common uses for this series are irrigated cropland growing primarily almonds, alfalfa, onions, tomatoes, small grains, grapes and pasture. Vegetation consists of red brome, filaree, soft chess, wildoats, ripgut brome and scattered valley oaks.

**Veritas fine sandy loam.** This series consists of deep to duripan, moderately well drained soils. They formed in alluvium derived from mixed rock sources. Veritas soils are on low fan terraces. They have slow runoff and moderately rapid permeability. Common uses for this series include irrigated cropland. Alfalfa, barley and corn are the principal crops. Vegetation is annual grasses, forbs and scattered valley oaks.

## FAULTS AND SEISMICITY

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### Faults

A fault is a fracture in the crust of the earth. A fault trace is the line on the earth's surface defining the fault. Displacement of the earth's crust along faults releases energy in the form of earthquakes and in some cases in fault creep. Most faults are the result of repeated displacements over a long period of time.

Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Surface ruptures have been known to extend up to 50 miles with displacements of an inch to 20 feet. Fault

rupture almost always follows preexisting faults, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking.

The State of California designates faults as active, potentially active, and inactive depending on how recent the movement that can be substantiated for a fault. Table 5.5-2 presents the California fault activity rating system.

**TABLE 5.5-2: FAULT ACTIVITY RATING**

<i>FAULT ACTIVITY RATING</i>	<i>GEOLOGIC PERIOD OF LAST RUPTURE</i>	<i>TIME INTERVAL (YEARS)</i>
Active (A)	Holocene	Within last 11,000 years
Potentially Active (PA)	Quaternary	11,000-1.6 Million Years
Inactive (I)	Pre-Quaternary	Greater than 1.6 Million

*SOURCE: CALIFORNIA GEOLOGICAL SURVEY*

The 2010 Fault Activity Map provided by the California Department of Conservation identified potential seismic sources within 100 kilometers (62 miles) of the Planning Area. The closest known faults classified as active by the California Geological Survey are the Greenville fault, located approximately 20 miles to the west. The Vernalis Fault located approximately 6 miles to the southwest has had movement as recently as the Quaternary Period (Pliocene Epoch 2.588 million years ago to 11.7 thousand years ago), thus, is considered a potentially active fault. Other faults that could potentially affect the Planning Area include the Mount Diablo, Calaveras, Hayward, Ortigalita and San Andreas Faults. Figure 5.5-3 provides a map of known area faults.

## Seismicity

The amount of energy available to a fault is determined by considering the slip-rate of the fault, its area (fault length multiplied by down-dip width), maximum magnitude, and the rigidity of the displaced rocks. These factors are combined to calculate the moment (energy) release on a fault. The total seismic energy release for a fault source is sometimes partitioned between two different recurrence models, the characteristic and truncated Gutenberg-Richter (G-R) magnitude-frequency distributions. These models incorporate our knowledge of the range of magnitudes and relative frequency of different magnitudes for a particular fault. The partition of moment and the weights for multiple models are given in the following summary.

Earthquakes are generally expressed in terms of intensity and magnitude. Intensity is based on the observed effects of ground shaking on people, buildings, and natural features. By comparison, magnitude is based on the amplitude of the earthquake waves recorded on instruments, which have a common calibration. The Richter scale, a logarithmic scale ranging from 0.1 to 9.0, with 9.0 being the strongest, measures the magnitude of an earthquake relative to ground shaking. Table 5.5-3 provides a description and a comparison of intensity and magnitude.

## 5.0 CONSERVATION AND NATURAL RESOURCES

**TABLE 5.5-3: RICHTER MAGNITUDES AND EFFECTS**

MAGNITUDE	EFFECTS
< 3.5	Typically not felt
3.5 – 5.4	Often felt but damage is rare
5.5 – < 6	Damage is slight for well-built buildings
6.1 – 6.9	Destructive potential over ±60 miles of occupied area
7.0 – 7.9	“Major Earthquake” with the ability to cause damage over larger areas
≥ 8	“Great Earthquake” can cause damage over several hundred miles

SOURCE: ASSOCIATION OF BAY AREA GOVERNMENTS, 2011.

According to the California Geological Survey’s Probabilistic Seismic Hazard Assessment Program, San Joaquin County is considered to be within an area that is predicted to have a 10 percent probability that a seismic event would produce horizontal ground shaking of 10 to 20 percent within a 50-year period. This level of ground shaking correlates to a Modified Mercalli intensity of V to VII, light to strong. Table 5.5-4 below presents Modified Mercalli intensity effects at each level.

**TABLE 5.5-4: MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES**

RICHTER MAGNITUDE	MODIFIED MERCALLI	EFFECTS OF INTENSITY
0.1 – 0.9	I	Earthquake shaking not felt
1.0 – 2.9	II	Shaking felt by those at rest.
3.0 – 3.9	III	Felt by most people indoors, some can estimate duration of shaking.
4.0 – 4.5	IV	Felt by most people indoors. Hanging objects rattle, wooden walls and frames creak.
4.6 – 4.9	V	Felt by everyone indoors, many can estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle and glasses clink. Doors open, close and swing.
5.0 – 5.5	VI	Felt by all who estimate duration of shaking. Sleepers awoken, liquids spill, objects are displaced, and weak materials crack.
5.6 – 6.4	VII	People frightened and walls unsteady. Pictures and books thrown, dishes and glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.5 – 6.9	VIII	Difficult to stand. Waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers, and elevated tanks twist and fall.
7.0 – 7.4	IX	General fright as people are thrown down, hard to drive. Trees broken, damage to foundations and frames. Reservoirs damaged, underground pipes broken.
7.5 – 7.9	X	General panic. Ground cracks, masonry and frame buildings destroyed. Bridges destroyed, railroads bent slightly. Dams, dikes and embankments damaged.
8.0 – 8.4	XI	Large landslides, water thrown, general destruction of buildings. Pipelines destroyed, railroads bent.
8.5 +	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

SOURCE: UNITED STATES GEOLOGICAL SURVEY



The Significant United States Earthquake data published by the USGS in the National Atlas identifies earthquakes that caused deaths, property damage, and geologic effects or were felt by populations near the epicenter. No significant earthquakes are identified within the Planning Area; however, significant earthquakes are documented in the region. The following table presents the significant earthquakes in the region.

**TABLE 5.5-5: SIGNIFICANT EARTHQUAKES IN THE REGION**

MAGNITUDE	INTENSITY	LOCATION	YEAR
6.0	VIII	South Napa	2014
5.6	VI	San Jose	2007
5.0	VII	Napa	2000
6.9	IX	Loma Prieta (San Andreas)	1989
5.4	N/A	Santa Cruz County	1989
6.2	N/A	Morgan Hill	1984
5.8, 5.8	VII	Livermore	1980
5.7	N/A	Coyote Lake	1979
5.7, 5.6	N/A	Santa Rosa	1969
5.3, 4.2	N/A	Daly City	1957
5.4	N/A	Concord	1954
6.5	N/A	Calaveras fault	1911
7.9	IX	San Francisco	1906
6.8	N/A	Mendocino	1898
6.2	N/A	Mare Island	1898
6.3	N/A	Calaveras fault	1893
6.2	VIII	Winters	1892
6.4	N/A	Vacaville	1892
6.8	VII	Hayward	1868
6.5	VIII	Santa Cruz Mountains	1865
6.8	N/A	San Francisco Peninsula	1838

SOURCE: UNITED STATE GEOLOGICAL SURVEY, 2015.

### Alquist-Priolo Special Study Zone

The California legislature passed the Alquist-Priolo Special Studies Zone Act in 1972 to address seismic hazards associated with faults and to establish criteria for developments for areas with identified seismic hazard zones. The California Geologic Survey (CGS) evaluates faults with available geologic and seismologic data and determines if a fault should be zoned as active, potentially active, or inactive. If CGS determines a fault to be active, then it is typically incorporated into a Special Studies Zone in accordance with the Alquist-Priolo Earthquake Hazard Act. Alquist-Priolo Special Study Zones are usually one-quarter mile or less in width and require site-specific evaluation of fault location and require a structure setback if the fault is found traversing a project site. The Planning Area is not within an Alquist-Priolo Special Study Zone. The nearest Alquist-Priolo fault zone, the Greenville fault zone, is located approximately 20 miles southwest of Lathrop.

### SEISMIC HAZARDS

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#### **Seismic Ground Shaking**

The potential for seismic ground shaking in California is expected. As a result of the foreseeable seismicity in California, the State requires special design considerations for all structural improvements in accordance with the seismic design provisions in the California Building Code. These seismic design provisions require enhanced structural integrity based on several risk parameters.

#### **Fault Rupture**

A fault rupture occurs when the surface of the earth breaks as a result of an earthquake, although this does not happen with all earthquakes. These ruptures generally occur in a weak area of an existing fault. Ruptures can be sudden (i.e. earthquake) or slow (i.e. fault creep). The Alquist-Priolo Fault Zoning Act requires active earthquake fault zones to be mapped and it provides special development considerations within these zones. Lathrop does not have surface expression of active faults and fault rupture is not anticipated. Figure 5.5-3 shown regional faults in relation to Lathrop.

#### **Liquefaction**

Liquefaction typically requires a significant sudden decrease of shearing resistance in cohesion-less soils and a sudden increase in water pressure, which is typically associated with an earthquake of high magnitude. The potential for liquefaction is highest when groundwater levels are high, and loose, fine, sandy soils occur at depths of less than 50 feet. Soil data from the NRCS Web Soil Survey (NRCS 2017) suggests that the potential for liquefaction ranges from low to high within the Planning Area given that many soils are high in sand and the water table is moderately high.

#### **Lateral Spreading**

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas of liquefaction. The potential for liquefaction is moderate to high in many areas of the city, however because the Planning Area is essentially flat lateral spreading of soils has not been observed within the Planning Area.

#### **Landslides**

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The Planning Area is essentially flat; therefore, the potential for a landslides is generally low.

### NON-SEISMIC HAZARDS

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#### **Expansive Soils**

Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wet. If structures are underlain by expansive soils, it is

important that foundation systems be capable of tolerating or resisting any potentially damaging soil movements. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from buildings as well as limiting landscaping watering.

According to the NRCS Web Soil Survey, the soils in the Planning Area soils vary from a low shrink-swell potential to a moderate shrink-swell potential. Figure 5.5-4 provides a map of the shrink-swell potential of the soils within the Planning Area.

### **Erosion**

Erosion naturally occurs on the surface of the earth as surface materials (i.e. rock, soil, debris, etc.) is loosened, dissolved, or worn away, and transported from one place to another by gravity. Two common types of soil erosion include wind erosion and water erosion. The steepness of a slope is an important factor that affects soil erosion. Erosion potential in soils is influenced primarily by loose soil texture and steep slopes. Loose soils can be eroded by water or wind forces, whereas soils with high clay content are generally susceptible only to water erosion. The potential for erosion generally increases as a result of human activity, primarily through the development of facilities and impervious surfaces and the removal of vegetative cover.

The *Custom Soils Report* identified the erosion potential for the soils in the Planning Area. This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. Soil property data for each map unit component includes the hydrologic soil group, erosion factors K for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Within the Planning Area, the erosion factor K varies from 0.02 to 0.37, which is considered a low to moderate potential for erosion. Furthermore, given the drainage characteristics of the majority of the soils and the nearly level topography of the Planning Area, runoff erosion hazard is considered low. The wind erosion potential ranges from moderate-to-high during the spring, summer, and fall, however this potential for wind erosion diminish during the winter.

### **Collapsible Soils**

Collapsible soils undergo a rearrangement of their grains and a loss of cementation, resulting in substantial and rapid settlement under relatively low loads. Collapsible soils occur predominantly at the base of mountain ranges, where Holocene-age alluvial fan and wash sediments have been deposited during rapid run-off events. Soils prone to collapse are commonly associated with manmade fill, wind-laid sands and silts, and alluvial fan and mudflow sediments deposited during flash floods. During an earthquake, even slight settlement of fill materials can lead to a differentially settled structure and significant repair costs. Differential settlement of structures typically occurs when heavily irrigated landscape areas are near a building foundation. Examples of common problems associated with collapsible soils include tilting floors, cracking or separation in structures, sagging floors, and nonfunctional windows and doors. Collapsible soils have not been identified in the Planning Area as an issue. However, in areas subject to potential liquefaction, the potential for liquefaction induced settlement is present.

### **Subsidence**

Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Common causes of land subsidence from human activity include: pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils. Subsidence has not been identified as an issue in the Planning Area.

### **Naturally Occurring Asbestos**

The term “asbestos” is used to describe a variety of fibrous minerals that, when airborne, can result in serious human health effects. Naturally occurring asbestos is commonly associated with ultramafic rocks and serpentinite. Ultramafic rocks, such as dunite, peridotite, and pyroxenite are igneous rocks comprised largely of iron-magnesium minerals. As they are intrusive in nature, these rocks often undergo metamorphosis, prior to their being exposed on the Earth’s surface. The metamorphic rock serpentinite is a common product of the alteration process. Naturally occurring asbestos is not identified within San Joaquin County, although it is all located to the east and west of the Planning Area in mountainous areas in Contra Costa and Calaveras Counties. There is no naturally occurring asbestos mapped within Lathrop.

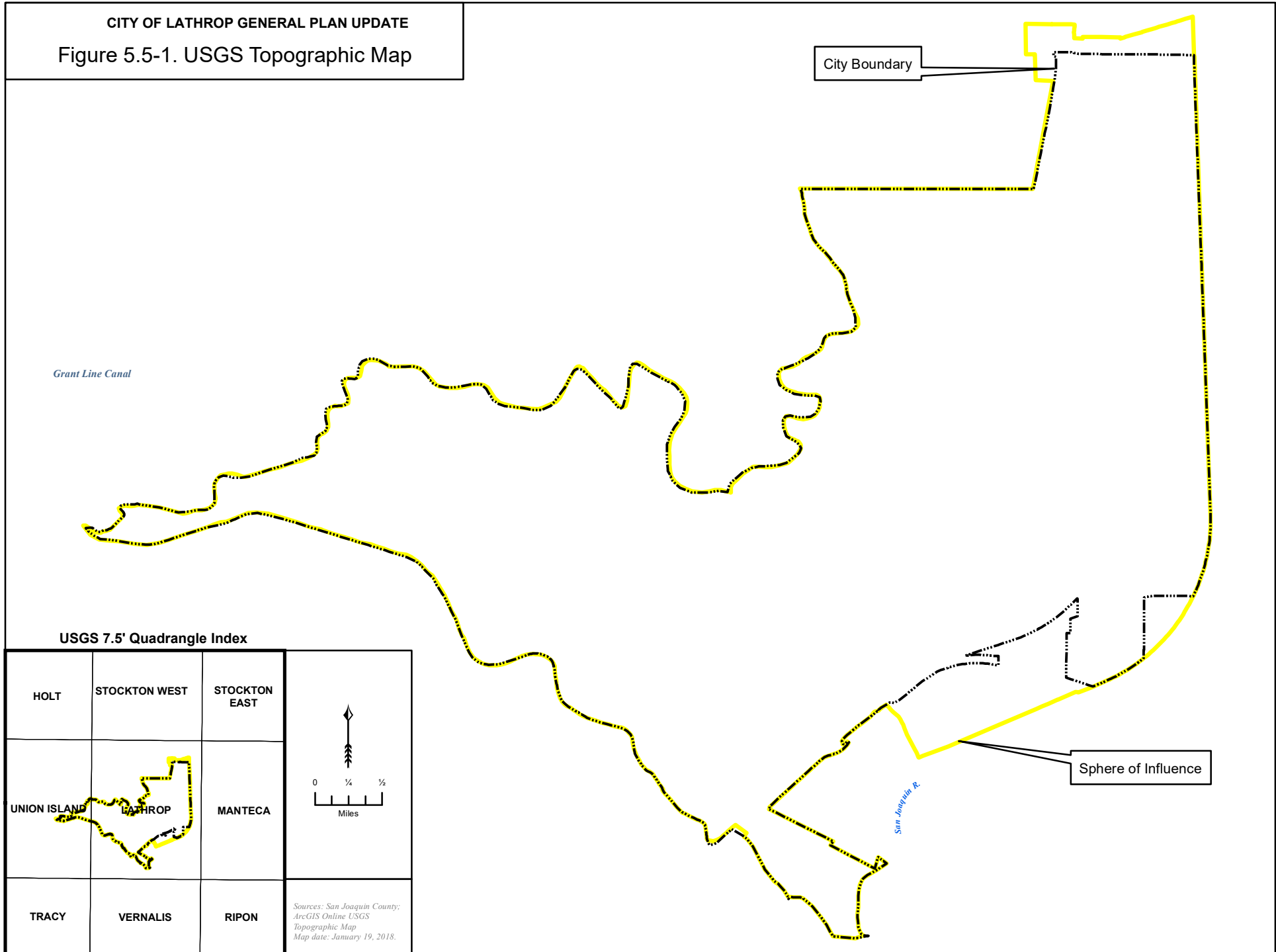
### **REFERENCES**

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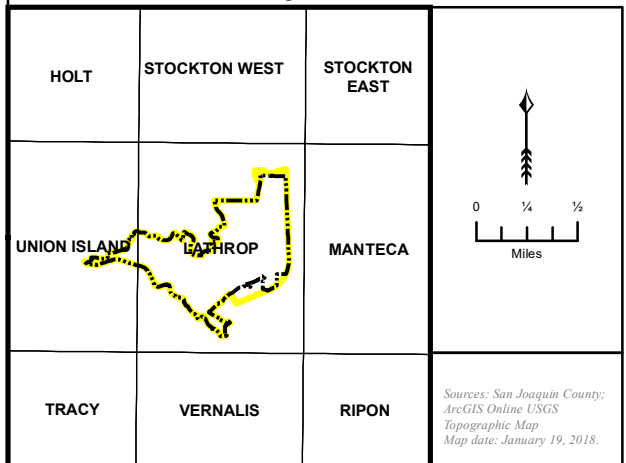
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- California Geological Survey. 2013. Seismic Shaking Hazards in California Based on the USGS/CGS Probabilistic Seismic Hazards Assessment (PSHA) Model.
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- Asbestos TEM Laboratories inc. adapted 2011 U.S. Geological Survey open-file report prepared by Bradley S. Van Gosen (U.S. Geological Survey, Denver, CO) and John P. Clinkenbeard (California Geological Survey, Sacramento).
- US Geologic Survey; CalAtlas; Open Street Data Map date: January 17, 2018.

CITY OF LATHROP GENERAL PLAN UPDATE

Figure 5.5-1. USGS Topographic Map



USGS 7.5' Quadrangle Index



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**Legend**

Lathrop City Boundary

Lathrop Sphere of Influence

**NRCS Soil Description**

109 - Bigani loamy coarse sand, partially drained

110 - Boggiano clay loam

130 - Columbia fine sandy loam, drained

131 - Columbia fine sandy loam, partially drained, occasionally flooded

132 - Columbia fine sandy loam, channeled, partially drained, frequently flooded

133 - Columbia fine sandy loam, clayey substratum, partially drained

142 - Delhi loamy sand, MLRA 17

144 - Dello sand, partially drained, occasionally flooded

145 - Dello loamy sand, drained

147 - Dello sandy loam, clayey substratum, drained

148 - Dello clay loam, drained, overwashed

153 - Egbert silty clay loam, partially drained

166 - Grangeville fine sandy loam, partially drained

167 - Grangeville clay loam, partially drained

169 - Guard clay loam, drained

175 - Honcut sandy loam

196 - Manteca fine sandy loam

197 - Merritt silty clay loam, partially drained

198 - Merritt silty clay loam, partially drained, 0 to 2 percent slopes,

243 - Scribner clay loam, partially drained

254 - Timor loamy sand

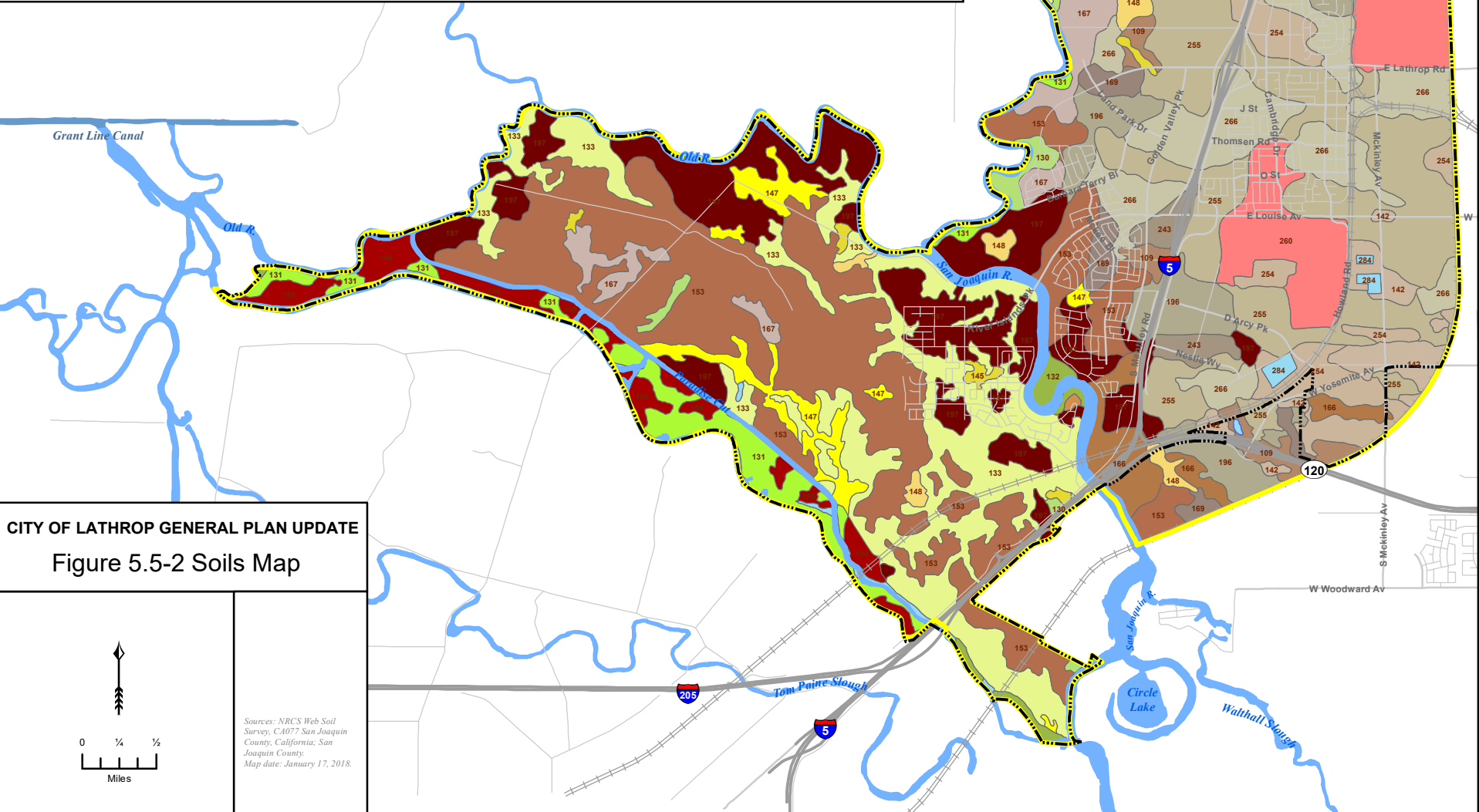
255 - Tinnin loamy coarse sand

261 - Valdez silt loam, organic substratum, partially drained

266 - Veritas fine sandy loam

260 - Urban land

284 - Water



**CITY OF LATHROP GENERAL PLAN UPDATE**  
**Figure 5.5-2 Soils Map**

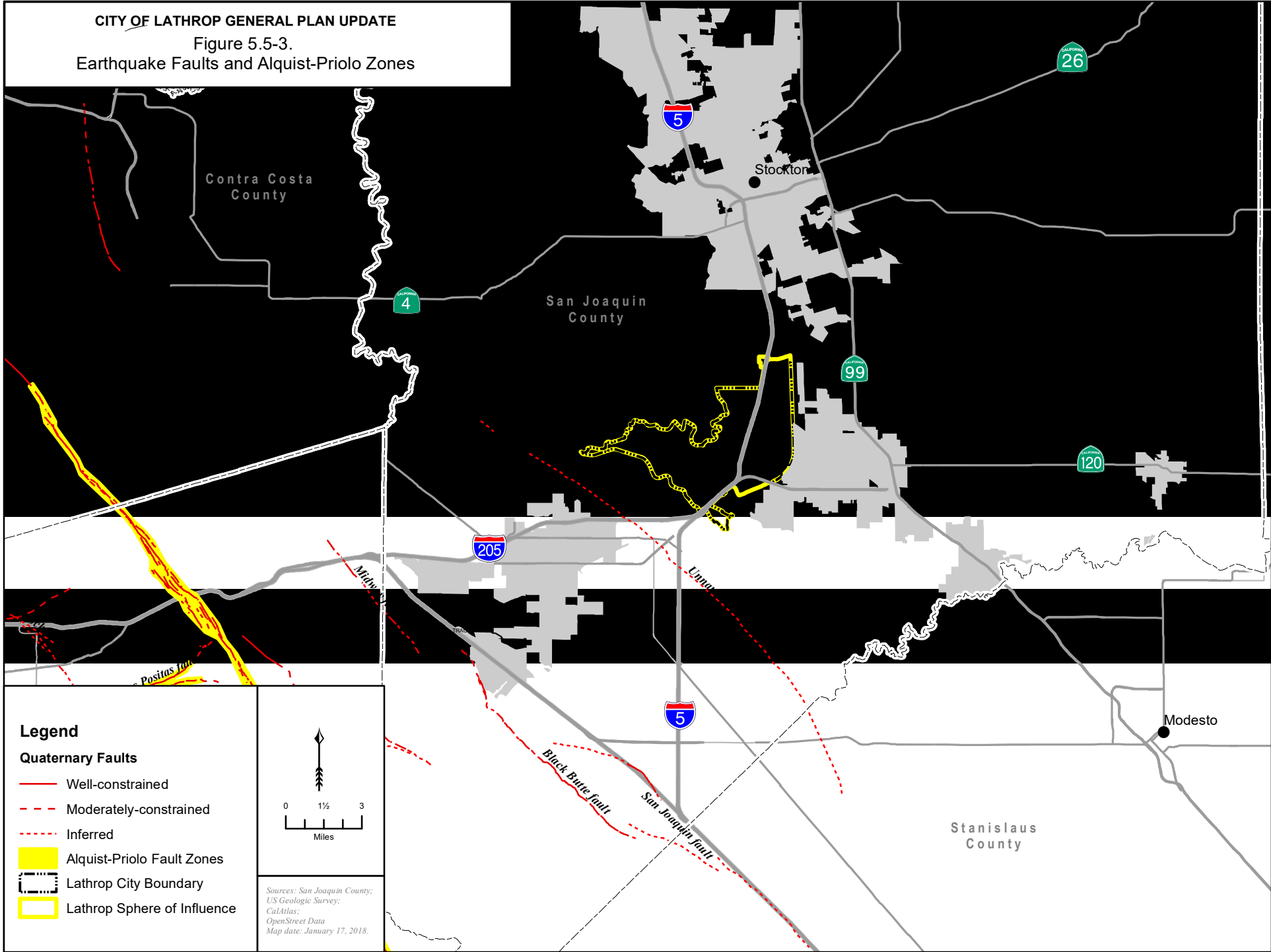


Sources: NRCS Web Soil Surveys, CA077 San Joaquin County, California; San Joaquin County.  
 Map date: January 17, 2018.

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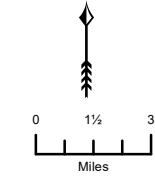
**CITY OF LATHROP GENERAL PLAN UPDATE**  
**Figure 5.5-3.**  
**Earthquake Faults and Alquist-Priolo Zones**



**Legend**

**Quaternary Faults**

- Well-constrained
- - - Moderately-constrained
- ... Inferred
- Alquist-Priolo Fault Zones
- - - Lathrop City Boundary
- Lathrop Sphere of Influence



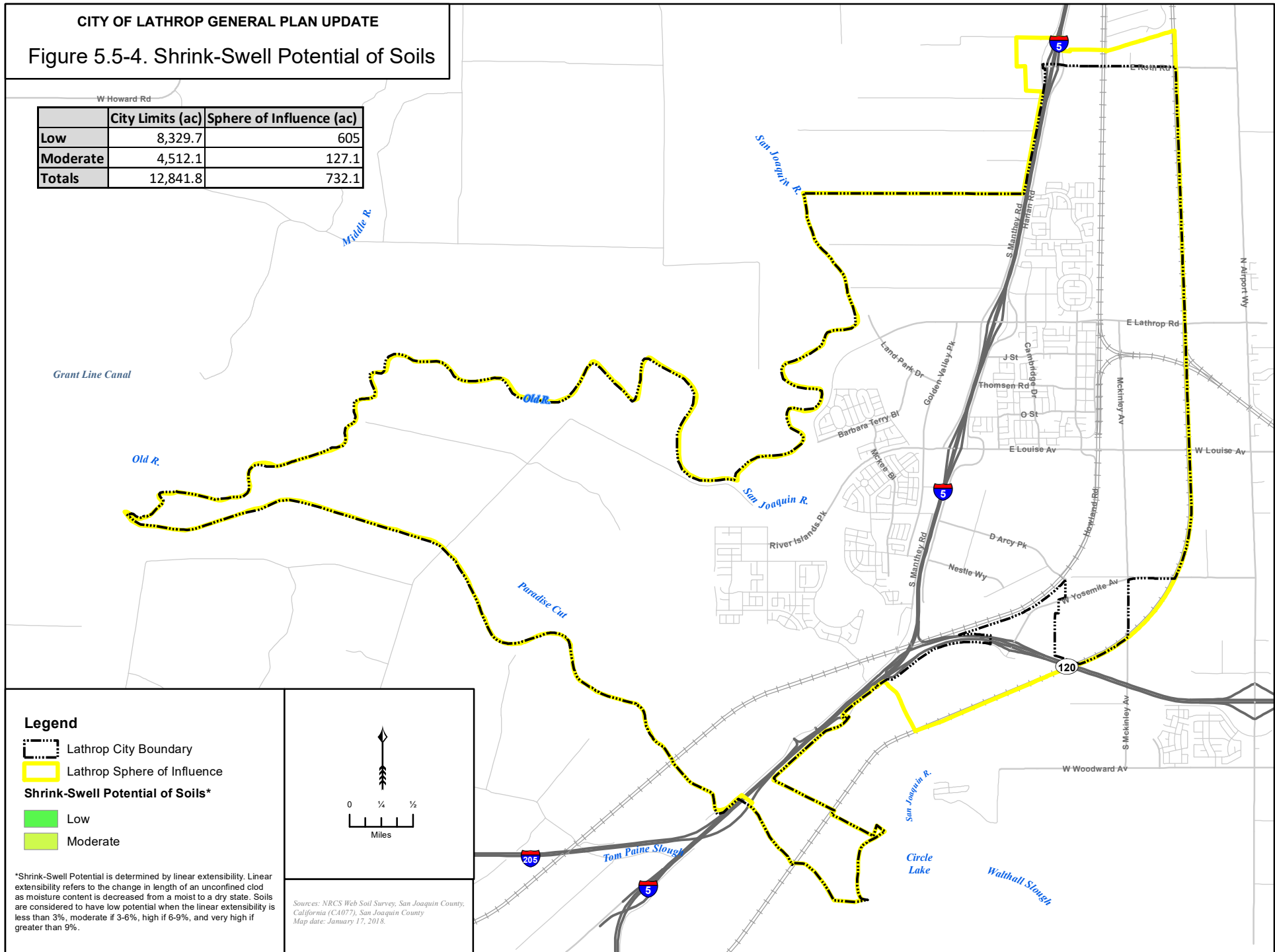
Sources: San Joaquin County;  
 US Geologic Survey;  
 CaAtlas;  
 OpenStreet Data  
 Map date: January 17, 2018.

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CITY OF LATHROP GENERAL PLAN UPDATE

Figure 5.5-4. Shrink-Swell Potential of Soils

	City Limits (ac)	Sphere of Influence (ac)
Low	8,329.7	605
Moderate	4,512.1	127.1
Totals	12,841.8	732.1



**Legend**

- Lathrop City Boundary
- Lathrop Sphere of Influence
- Shrink-Swell Potential of Soils\***
- Low
- Moderate



\*Shrink-Swell Potential is determined by linear extensibility. Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Soils are considered to have low potential when the linear extensibility is less than 3%, moderate if 3-6%, high if 6-9%, and very high if greater than 9%.

Sources: NRCS Web Soil Survey, San Joaquin County, California (CA077), San Joaquin County  
Map date: January 17, 2018.

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## 5.6 MINERAL AND ENERGY RESOURCES

This section describes mineral and energy resources in the Planning Area from both a qualitative and quantitative perspective. The results of this assessment may be used in planning and management decisions that may affect mineral and energy resources in the Planning Area.

### REGULATORY FRAMEWORK

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#### *STATE*

#### **Surface Mining and Reclamation Act of 1975**

The California Department of Conservation Surface Mining and Reclamation Act of 1975 (§ 2710), also known as SMARA, provides a comprehensive surface mining and reclamation policy that permits the continued mining of minerals, as well as the protection and subsequent beneficial use of the mined and reclaimed land. The purpose of SMARA is to ensure that adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition and readily adaptable for alternative land uses. The production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, wildlife, range and forage, as well as aesthetic enjoyment. Residual hazards to public health and safety are eliminated. These goals are achieved through land use planning by allowing a jurisdiction to balance the economic benefits of resource reclamation with the need to provide other land uses.

If a use is proposed that might threaten the potential recovery of minerals from an area that has been classified mineral resource zone 2 (MRZ-2), SMARA would require the jurisdiction to prepare a statement specifying its reasons for permitting the proposed use, provide public notice of these reasons, and forward a copy of the statement to the State Geologist and the State Mining and Geology Board (Cal. Pub. Res. Code Section 2762). Lands classified MRZ-2 are areas that contain identified mineral resources.

#### **Division of Mines and Geology**

The California Division of Mines and Geology (DMG) operates within the Department of Conservation. The DMG is responsible for assisting in the utilization of mineral deposits and the identification of geological hazards.

#### **State Geological Survey**

Similar to the DMG, the California Geological Survey is responsible for assisting in the identification and proper utilization of mineral deposits, as well as the identification of fault locations and other geological hazards.

#### **Public Resources Code**

PRC Section 2762(d) and 2763 requires a lead agency to prepare a statement specifying its reasons for permitting a use that would threaten the potential to extract mineral resources either 1) in an area that has been designated in its general plan as having important minerals to be protected, or 2) if the use is proposed in an area with significant resources pursuant to Section 2761(b)(2) and the lead agency has not yet acted on the State's designation. PRC Section 2763 requires that lead agency land use decisions involving areas designated as being of regional significance shall be in accordance with the lead agency's mineral resource management policies and shall also, in balancing mineral values against alternative land uses, consider the importance of these minerals to their market region as a whole and not just their importance to the lead agency's area of jurisdiction.

## 5.0 CONSERVATION AND NATURAL RESOURCES

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### *LOCAL*

#### **Lathrop General Plan**

The existing City of Lathrop General Plan identifies the following Mineral Resource Policies:

1. Lands classified by the State Department of Conservation as MRZ-2 as shown on Figure V-1 and as designated by the State Mining and Geology Board as shown on Figure V-1.5, are urged for protection to assure their availability for mining under applicable provisions of State Law and local ordinance. If determined practical and feasible, these lands are to be mined and reclaimed in accordance with the provisions of the California Surface Mining and Reclamation Act of 1975, as amended, prior to their being utilized for the various urban purposes depicted on the General Plan Diagram and described in this document.
2. While the depth of the known sand deposits of regional significance is considerable, the potential for mining to this depth is recognized only for the lands between the I-5/SR 120 merge and the Union Pacific Railroad. Lands classified MRZ-2 and designated on Stewart Tract may be mined to a much lesser depth, or not at all, because of the potential of this site location for Regional Commercial and Highway Commercial development.
3. Lands classified MRZ-2 and designated as described above shall be zoned by the City with a combining "mineral resource open space zone" to identify the presence of known mineral deposits and which may restrict the encroachment of incompatible land uses in those areas for which mineral conservation is urged. As an alternative, such restriction may be included in any Specific Plan applicable to the affected property.
4. In consideration of mineral policy #2, above, lands classified MRZ-2 and designated may be developed for urban use without first being mined only if compelling reasons can be stated by the City in writing in support of such action and upon fulfilling the requirements of Section 2762(d) and Section 2796(a) of the Surface Mining and Reclamation Act of 1975, as amended. Action by the City shall consider the need to balance mineral values against alternative land uses, and the importance of these mineral deposits to the regional market demand for their use.

## ENVIRONMENTAL SETTING

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### **Statewide Resources**

In 2012, the California Geological Survey identified that approximately 4 billion tons of permitted aggregate reserves lie within the 31 aggregate study areas in California. These permitted aggregate reserves have been determined to be acceptable for commercial use, exist within properties owned or leased by aggregate producing companies, and have permits allowing mining of aggregate material. Sand, gravel, and crushed stones are construction materials that are collectively referred to as construction aggregate. These materials provide the bulk and strength to Portland cement concrete (PCC), asphaltic concrete (AC), plaster, and stucco. Other uses include road base, subbase, railroad ballast, and fill.

From 1981 to 2010, California consumed an average of about 180 million tons of construction aggregate (all grades) per year. (CGS, 2012)

## Regional Setting

The primary mineral resources in San Joaquin County are sand, gravel, and natural gas, with limited mining of peat, gold, and silver. In 2012, the California Geological Survey assessed the Stockton-Lodi Production-Consumption (P-C) Region mineral resources, with a focus on aggregate resources. Mineral resources in the region are classified based on whether the aggregate meets the specifications for use in PCC. This aggregate is termed “PCC-grade aggregate.” The material quality specifications for PCC-grade aggregate are more restrictive than the specifications for aggregate for other applications. As a result of the strict specifications, PCC-grade aggregate deposits are more scarce and valuable than other aggregate resources.

The California Geological Survey issued Special Report 199 designating areas within the Stockton-Lodi P-C Region based on the significance of mineral resources. The Stockton-Lodi P-C Region contains about 969 million tons PCC-grade aggregate resources and 67 million tons PCC-grade sand resources. These resources are classified into different mineral resource zone designations, as described below.

To be considered significant for the purpose of mineral land classification, a mineral deposit or group of deposits, must meet criteria adopted by the State Mining and Geology Board. These criteria include marketability and threshold values. The threshold value is approximately \$17.375 million for a construction aggregate deposit. PCC-grade aggregate sells for about \$13 per ton in the Stockton-Lodi P-C Region; therefore, \$17,375,000 equates to about 1.3 million tons of PCC-grade aggregate material.

## Mineral Resource Classification

Pursuant to the Surface Mining and Reclamation Act of 1975 (SMARA), the California State Mining and Geology Board oversees the Mineral Resource Zone (MRZ) classification system. The MRZ system characterizes both the location and known/presumed economic value of underlying mineral resources. The mineral resource classification system uses four main MRZs based on the degree of available geologic information, the likelihood of significant mineral resource occurrence, and the known or inferred quantity of significant mineral resources. The four classifications are described in Table 5.6-1 below.

**TABLE 5.6-1: MINERAL RESOURCE CLASSIFICATION SYSTEM**

CLASSIFICATION	DESCRIPTIONS
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
MRZ-2	Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
MRZ-3	Areas containing mineral deposits, the significance of which cannot be evaluated.
MRZ-4	Areas where available information is inadequate for assignment to any other MRZ classification.

SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION DIVISION OF MINES AND GEOLOGY, ACCESSED DECEMBER 2017

## Mineral Extraction Activities

Approximately 232 million tons of PCC-grade aggregate reserves are permitted for production in the County (CGS, 2012). There are 34 active and inactive aggregate mines within San Joaquin County (San Joaquin County, 2009). The nearest active aggregate mine is Brown Sand Incorporated located adjacent to the southeast portion of the Planning Area along Mossdale Road.

## 5.0 CONSERVATION AND NATURAL RESOURCES

### Local Resources

Figure 5.6-1: Mineral Resource Zones shows mineral resources within and near the Planning Area. As shown on Figure 5.6-1, the southeastern portion of the Planning Area near the Stewart Tract and Oakwood Lake is located in Resource Sector D, which consists of a large PCC-grade sand deposit situated along the San Joaquin Rivers. This sector is classified as MRZ-2 (PCC sand). The Planning Area also contains areas that are designated as MRZ-3 “areas containing mineral deposits the significance of which cannot be evaluated from available data.” Table 5.6-2 identifies significant mineral resources within the City, and Planning Area.

**TABLE 5.6-2: MINERAL RESOURCES WITHIN THE PLANNING AREA**

<i>CLASSIFICATION</i>	<i>DESCRIPTIONS</i>	<i>CITY LIMITS (AC)</i>	<i>SPHERE OF INFLUENCE (AC)</i>
<b>MRZ-2</b>	Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.	509.0	286.2
<b>MRZ-3</b>	Areas containing mineral deposits, the significance of which cannot be evaluated.	2708.2	120.4
<b>Totals</b>		<b>3217.2</b>	<b>406.6</b>

*SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION DIVISION OF MINES AND GEOLOGY, ACCESSED DECEMBER 2017*

### REFERENCES

California Department of Conservation. 2002. California Geological Survey, Note 36.

California Natural Resources Agency (2012) updated mineral land classification map.

Department of Conservation (2012) mineral land classification map for Portland Cement concrete grade aggregate in the Stockton-Lodi area.

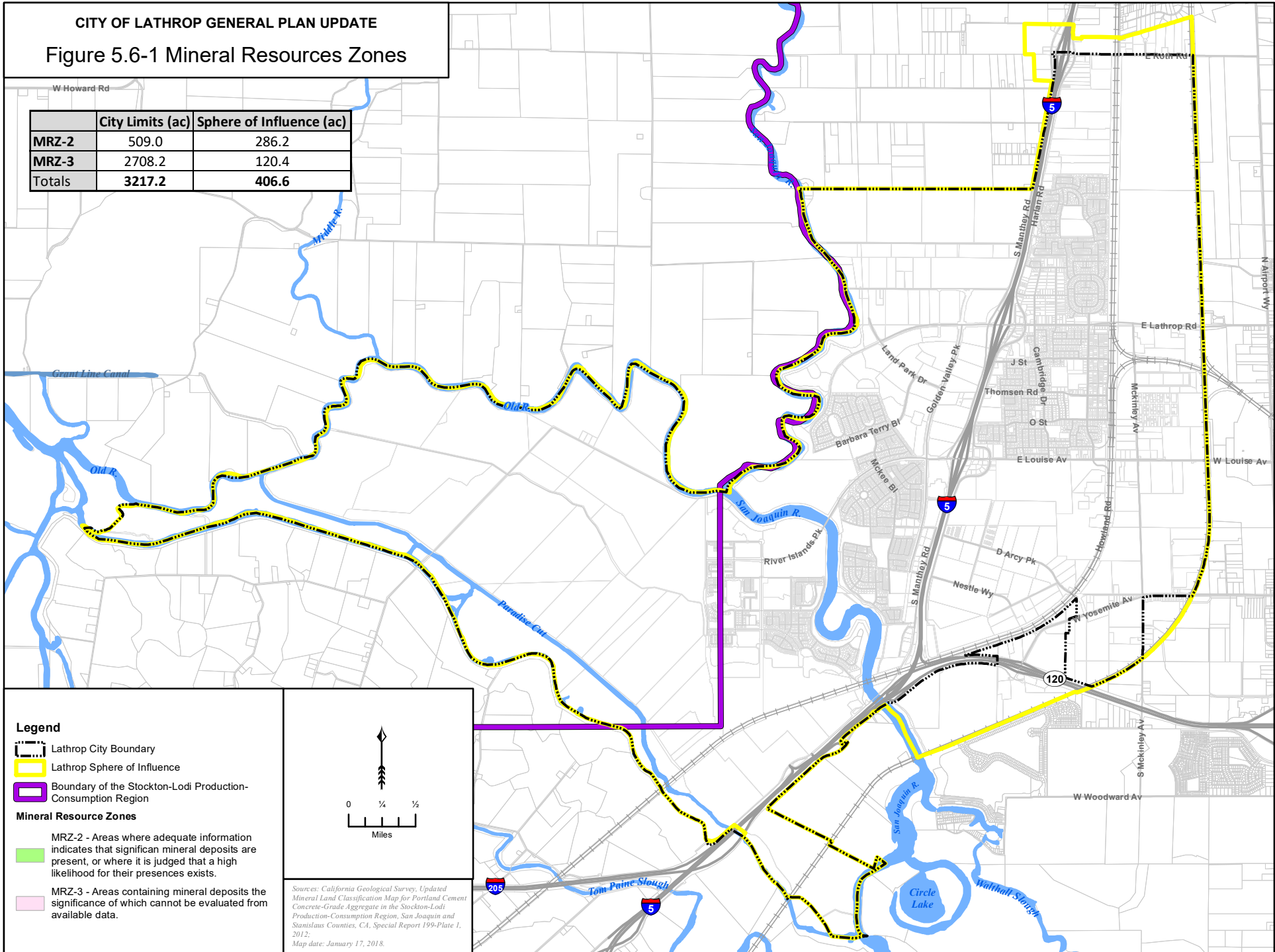
Department of Conservation (2012) production-consumption (p-c) region, San Joaquin and Stanislaus counties, California special report 199-plate 1.



CITY OF LATHROP GENERAL PLAN UPDATE

Figure 5.6-1 Mineral Resources Zones

	City Limits (ac)	Sphere of Influence (ac)
MRZ-2	509.0	286.2
MRZ-3	2708.2	120.4
Totals	3217.2	406.6

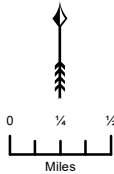


Legend

- Lathrop City Boundary
- Lathrop Sphere of Influence
- Boundary of the Stockton-Lodi Production-Consumption Region

Mineral Resource Zones

- MRZ-2 - Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presences exists.
- MRZ-3 - Areas containing mineral deposits the significance of which cannot be evaluated from available data.



Sources: California Geological Survey, Updated Mineral Land Classification Map for Portland Cement Concrete-Grade Aggregate in the Stockton-Lodi Production-Consumption Region, San Joaquin and Stanislaus Counties, CA, Special Report 199-Plate 1, 2012.  
Map date: January 17, 2018.

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## 5.7 HYDROLOGY AND WATER QUALITY

This section provides an overview of hydrology and water quality within the Planning Area and the vicinity. For information on flood-related issues and flood safety see Section 4.4 (Flooding). For information relating to water, wastewater, and drainage infrastructure see Section 3.1 (Utility Services).

### REGULATORY FRAMEWORK

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#### *FEDERAL AND STATE*

#### **Clean Water Act (CWA)**

The Clean Water Act (CWA), initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. Section 402(p) of the act establishes a framework for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) Program. Section 402(p) requires that stormwater associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

The State Water Resources Control Board (SWRCB) is responsible for implementing the Clean Water Act and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for stormwater discharges (individual permits and general permits). The SWRCB elected to adopt a Statewide General Permit (Water Quality Order No. 2013-001-DWQ-DWQ).

#### **California Water Code**

The Clean Water Act places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states, although this does establish certain guidelines for the States to follow in developing their programs and allows the Environmental Protection Agency to withdraw control from states with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and each of the Regional Water Quality Control Boards (RWQCBs) power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region the regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Water Code Section 13260 requires all dischargers of waste that may affect water quality in waters of the state to prepare and provide a water quality discharge report to the RWQCB. Section 13260a-c is as follows:

## 5.0 CONSERVATION AND NATURAL RESOURCES

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(a) Each of the following persons shall file with the appropriate regional board a report of the discharge, containing the information that may be required by the regional board:

(1) A person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.

(2) A person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the boundaries of the state in a manner that could affect the quality of the waters of the state within any region.

(3) A person operating, or proposing to construct, an injection well.

(b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.

(c) Each person subject to subdivision (a) shall file with the appropriate regional board a report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge.

### **National Pollutant Discharge Elimination System (NPDES)**

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator. The terms of these NPDES permits implement pertinent provisions of the Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti-degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the Clean Water Act.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the SWRCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB has issued general permits for stormwater runoff from industrial and construction sites statewide. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

### **Water Quality Control Plan for the Central Valley Region**

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the

region. The term “water quality standards,” as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region’s ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

### LOCAL

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#### **City of Lathrop General Plan**

The existing Lathrop General Plan Community Development Element (Section D) includes policies that address water supply, sewerage and drainage/flood control.

#### **Community Development Element (Section D) *Water, Sewerage, Drainage, and Flood Control Policies:***

1. The City of Lathrop is the most logical governmental entity to assume management responsibility for water service to the developing urban pattern. However, this preference allows for the creation of other special districts, including Irrigation Districts, especially if these districts can provide utility improvement financing that protects the City’s existing rate payers. Development within the City’s three sub-plan areas is to be served by the City under development agreements between the City and project developers.
2. Urban development outside the existing city limits shall not be allowed to occur until reasonable certainty is established that additional firm supplies of potable water will be available to meet the needs of urban expansion into perpetuity.
3. Any Water, Wastewater and Recycled Water Master Plan update should provide for the eventual integration of the water well and distribution system serving the existing community with the system(s) needed to serve areas of urban expansion to avoid potential future problems of groundwater quality associated with the existing system.
4. In developing additional groundwater sources to meet requirements for firm water supply, the City will be required to meet State and Federal standards of water quality, including concern for such factors as taste, odor control, color, removal of any unique compounds of minerals identified through water testing, and need for disinfection and/or residual chlorination.
5. Pressurized water for fire suppression should be available at flows in the range of 1000 gpm (for all residential areas) to 3000 gpm (for commercial, industrial and institutional areas) for a period of 60 to 120 minutes over and above normal community water uses. The City Fire Chief is to be consulted in establishing specific fire suppression plans for new development, including the need for automatic sprinkling systems in nonresidential and multi-family residential developments and the need for above-ground storage to assure capacity for required periods of fire flow.

### Lathrop Municipal Code

#### CHAPTER 12.28 PROTECTION OF WATER COURSES

##### 12.28.020 Rules and regulations.

- A. It shall be unlawful for any person to interfere with, destroy or use in any manner whatsoever any levee, embankment, channel, dam, reservoir, rain or stream gauges, telephone line, piling; or other stream protection work constructed by the city or by any drainage district organized under the laws of the state, without having received a written permit therefor from the public works director, which permit shall be revocable whenever, in the opinion of the public works director the public interest and welfare require the revocation thereof. Application for the use of any levee, embankment, channel, dam or reservoir shall be made to the public works director, setting forth the particular use desired, and the purpose and duration thereof. The public works director shall investigate such applications and may impose such terms and conditions as may be necessary to insure the proper maintenance of the property for flood control and drainage purposes.
- B. It shall be unlawful for any person to place on or cause to be placed in any drainage ditch, water course, channel or conduit, or upon any property over which the city or any drainage district has an easement for flood control or drainage purposes duly recorded in the office of the city clerk, any wires, fence, building or other structure, or any refuse, rubbish, tin cans or other matter that may impede, retard or change the direction of the flow of water in such drainage ditch, water course, channel or conduit, or that will catch or collect debris carried by such water, or is placed where the natural flow of the storm and flood waters would carry the same downstream to the damage and detriment of either private or public property adjacent to said drainage ditch, water course, channel or conduit.
- C. It shall be unlawful for any person to change the drainage on his or her property so as to divert the drainage to the nearest public road, without first obtaining a permit to do so from the public works director.
- D. It shall be unlawful for any person to fill or obstruct or maintain any fill or obstruction in any drainage ditch, water course, channel or conduit carrying storm or drainage water unless a permit to do so has been obtained from the public works director.
- E. It shall be unlawful for any person to do anything to any drainage ditch, water course, channel or conduit carrying storm or drainage water that will in any manner obstruct or interfere with the flow of water through such ditches, water courses, channels or conduits unless a permit to do so has been obtained from the public works director.
- F. It shall be unlawful for any person to level land in a manner which would flood adjacent properties or public roadways.
- G. Every property owner, whether it be a person or his lessee or tenant, through whose property a drainage ditch, water course, channel or conduit carrying storm or drainage water passes, shall keep and maintain the same free from obstacles that will prevent or retard the flow of water through such ditch, water course, channel or conduit except that same may be filled or altered if a permit to do so has been first obtained pursuant to this chapter. (Prior code § 158.02)

**CHAPTER 13.28 - STORMWATER MANAGEMENT AND DISCHARGE CONTROL**

13.28.020 Purpose and intent. The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing in watersheds within the city of Lathrop, pursuant to and consistent with the Federal Clean Water Act (33 U.S.C. Section 1251 et seq.) and the Porter-Cologne Water Quality Act (California Water Code Section 13000 et seq.). This chapter seeks to meet that purpose through the following objectives:

- A. To comply with all federal and state laws, lawful standards and orders applicable to stormwater and urban runoff pollution control;
- B. To prohibit any discharge which may interfere with the operation of, or cause any damage to the storm drain system or impair the beneficial use of the receiving waters;
- C. To prohibit illicit discharges into the storm drain system;
- D. To reduce non-stormwater discharge to the storm drain system to the maximum extent practicable;
- E. Minimize increases in stormwater and runoff from any development in order to reduce flooding, siltation, and streambank erosion and maintain the integrity of drainage channels;
- F. Minimize nonpoint source pollution caused by stormwater runoff from development that would otherwise degrade local water quality; and
- G. Minimize the total annual volume of surface water runoff that flows from any specific site during and following development. (Ord. 07-265 § 1)

**13.28.130 REQUIREMENT TO PREVENT, CONTROL AND REDUCE STORMWATER POLLUTANTS.**

- A. Authorization to Adopt and Impose Best Management Practices (BMPs). The city may adopt requirements identifying best management practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of stormwater, the storm drain system, or waters of the United States. Where best management practice requirements are promulgated by the city or any federal, state of California, or regional agency for any activity, operation, or facility which would otherwise cause the discharge of pollutants to the storm drain system or a waters of the United States, every person undertaking such activity or operation, or owning or operating such facility shall comply with such requirements.
- B. New Development and Redevelopment. The city may adopt requirements identifying appropriate design standards and best management practices to control the volume, rate, and potential pollutant load of stormwater runoff from new development and redevelopment projects as may be appropriate to minimize the generation, transport and discharge of pollutants. The city shall incorporate such requirements in any land use entitlement and construction or building-related permit to be issued relative to such development or redevelopment. The owner and developer shall comply with the terms, provisions, and conditions of such land use entitlements and building permits as required in this chapter.
- C. Responsibility to Implement Best Management Practices. Notwithstanding the presence or absence of requirements promulgated pursuant to subsections A and B of this section, any person

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engaged in activities or operations, or owning facilities or property which will or may result in pollutants entering stormwater, the storm drain system, or waters of the United States shall implement best management practices to the extent they are technologically achievable to prevent and reduce such pollutants. The owner or operator of a commercial or industrial establishment shall provide reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses. Facilities to prevent accidental discharge of prohibited materials or other wastes shall be provided and maintained at the owner or operator's expense.

- D. Maintenance Agreements. All structural and nonstructural permanent stormwater BMPs not in the control of the city of Lathrop shall have an enforceable maintenance agreement to ensure the system functions as designed. The agreement shall include any and all maintenance easements required to access and inspect the stormwater BMPs, and to perform routine maintenance as required. Such agreements shall specify the parties responsible for the proper maintenance of all stormwater BMPs.

### **City of Lathrop Stormwater Management Program**

The City has an adopted stormwater management program (SWMP) for compliance with requirements of the Phase 2 NPDES municipal stormwater permit. The SWMP is composed of six program elements developed to reduce contaminants discharged into receiving water bodies. The six Minimum Control Measure (MCM) elements of the SWMP are public education and outreach, public involvement/participation, illicit discharge detection and elimination, construction site runoff control, post construction runoff control in new development and redevelopment, and pollution prevention/good housekeeping for municipal operations. For each MCM, the City has selected a suite of BMPs and measurable goals to address the specific stormwater problems identified within the city limits.

In association with the SWMP, the City adopted a Storm Water Ordinance, construction standards, and design review guidelines to reduce contaminants in stormwater runoff. Of particular relevance to the proposed project is the City's coordination of BMP review and implementation under the construction site runoff control program. New development and redevelopment control measures include development of structural controls, development of nonstructural controls, development of ordinances or regulatory mechanisms, and development of long-term operation and maintenance (O&M) practices.

Pollution prevention/good housekeeping for municipal operations addresses routine O&M activities for drainage systems, roadways, parks and open spaces, and other municipal operations to help ensure a reduction in pollutants entering the storm sewer system. The pollution prevention/good housekeeping program also includes a training component to prevent and reduce stormwater pollution from municipal operations. The pollution prevention/good housekeeping BMPs can be separated into two broad categories: source controls and materials management.

Source controls are BMPs designed to prevent or reduce pollutants at the source and include BMPs such as storm drainage system maintenance, structural floatable controls, street maintenance staff training, flood control projects, and litter ordinances. Materials management BMPs are designed to reduce pollutants with nonstructural controls such as pesticide education and spill prevention control.



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## ENVIRONMENTAL SETTING

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### Regional Hydrology

San Joaquin County is located in the San Joaquin River watershed. The San Joaquin River is about 300 miles long. It begins in the Sierra Nevada mountain range on California's eastern border. The river runs down the western slope of the Sierra and flows roughly northwest through the Central Valley, to where it meets the Sacramento River at the Sacramento-San Joaquin Delta, a 1,000-square-mile maze of channels and islands that drains more than 40 percent of the state's lands (SJRG 2013).

Because the Central Valley receives relatively little rainfall (12 to 17 inches a year, falling mostly October through March), snowmelt runoff from the mountains is the main source of fresh water in the San Joaquin River. Over its 300-mile length, the San Joaquin River is fed by many other streams and rivers, most notably the Stanislaus, Tuolumne, and Merced Rivers.

Most of the surface water in the upper San Joaquin River is stored and diverted at Millerton Lakes' Friant Dam, near Fresno. From Friant Dam, water is pumped north through the Madera Canal and south through the Friant-Kern canal to irrigation districts and other water retailers, which then deliver the water directly to the end users in the southern portion of the watershed.

In the central and northern portions of the watershed, many agricultural and municipal users receive water from irrigation districts, such as the Modesto, Merced, Oakdale, South San Joaquin and Turlock Irrigation Districts. That water is provided through diversions from rivers that are tributary to the San Joaquin, such as the Mokelumne, Stanislaus, Tuolumne and Merced Rivers.

In an average year, about 1.5 million acre-feet of water is diverted from the San Joaquin River at Friant Dam, leaving little flow in the river until the Merced River joins the San Joaquin northwest of the City of Merced. Additional water also reaches the river via flows returning to the river from municipal wastewater treatment plants, as well as urban and agricultural runoff. The rest of the area's water supply needs are met by importing water from northern California (via the Central Valley Project) and by pumping water from the groundwater basin (SJRG 2013).

### Climate

The SJVAB has an inland Mediterranean climate with warm, dry summers and cooler winters. The average daily maximum temperature in the Basin is 65 degrees Fahrenheit (°F), with average temperature highs of 95 °F in July. Average daily minimum temperature is 48 °F, with average temperature lows of 45 °F in January. Normal rainfall level is approximately 9 inches per year, and occurs mainly in the winter months from November to April. Thunderstorms occur on approximately three to four days in the spring, on average.

San Joaquin County has warm, dry days and relatively cool nights, with clear skies and limited rainfall. Winters are mild with light rains and frequent heavy fog from December to January. In summer, high temperatures often exceed 100 degrees, with averages in the low 90's in the northern valley and the high 90's in the southern valley. Summer low temperatures average in the high 50's in the northern valley and the upper 60's in the southern valley. The northern end of the Valley (Lathrop and Stockton area) receives approximately 20 inches of rain per year. The central portion of the Valley (Fresno area) receives approximately 10 inches of rain per year. The southern end of the Valley (Bakersfield area) receives less than 6 inches of rain per year.

### Watersheds

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 5.7-1 shows the primary watershed classification levels used by the State of California. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

**TABLE 5.7-1. STATE OF CALIFORNIA WATERSHED HIERARCHY NAMING CONVENTION**

<i>WATERSHED LEVEL</i>	<i>APPROXIMATE SQUARE MILES (ACRES)</i>	<i>DESCRIPTION</i>
Hydrologic Region (HR)	12,735 (8,150,000)	Defined by large-scale topographic and geologic considerations. The State of California is divided into ten HRs.
Hydrologic Unit (HU)	672 (430,000)	Defined by surface drainage; may include a major river watershed, groundwater basin, or closed drainage, among others.
Hydrologic Area (HA)	244 (156,000)	Major subdivisions of hydrologic units, such as by major tributaries, groundwater attributes, or stream components.
Hydrologic Sub-Area (HSA)	195 (125,000)	A major segment of an HA with significant geographical characteristics or hydrological homogeneity.

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2012.

### Hydrologic Region

San Joaquin County is located in the San Joaquin River Hydrological Region. The San Joaquin River is the principal river of the region, and all other streams of the region are tributary to it. The Mokelumne River and its tributary the Cosumnes River originate in the central Sierra Nevada, along with the more southerly Stanislaus and Tuolumne rivers. The Merced River flows from the south central Sierra Nevada and enters the San Joaquin near the City of Newman. The Chowchilla and Fresno rivers also originate in the Sierra south of the Merced River and trend westward toward the San Joaquin River. Creeks originating in the Coast Range and draining eastward into the San Joaquin River include Del Puerto Creek, Orestimba Creek, and Panoche Creek. Del Puerto Creek enters the San Joaquin near the City of Patterson, and Orestimba Creek enters north of the City of Newman. During flood years, Panoche Creek may enter the San Joaquin River or the Fresno Slough near the town of Mendota. The Kings River is a stream of the Tulare Lake Hydrologic Region, but in flood years it may contribute to the San Joaquin River, flowing northward through the James Bypass and Fresno Slough to enter near the City of Mendota. The Mud, Salt, Berrenda, and Ash Sloughs also add to the San Joaquin River, and numerous lesser streams and creeks also enter the system, originating in both the Sierra Nevada and the Coast Range. The entire San Joaquin river system drains northwesterly through the Delta to Suisun Bay (DWR 2013, pg. SJR-5).

### Local Watersheds (Hydrologic Sub-Areas)

Within the San Joaquin River Hydrological Region, the Planning Area is located in the Upper Old River, Oakwood Lake-San Joaquin River, and Town of French Camp-San Joaquin River watersheds as shown on Figure 5.7-1.

## Groundwater Basin

The City previously was bisected by two groundwater basins – the western portion of the City (west of the San Joaquin River) was included in the Tracy Groundwater Subbasin (DWR 5-22.15), and the eastern portion of the City (east of the San Joaquin River), was included in the Eastern San Joaquin Groundwater Subbasin (ESJ) (DWR 5-22.01). Both basins are subbasins of the San Joaquin Valley Groundwater Basin (DWR 5-22) and the San Joaquin River forms the boundary between the basins.

In 2018 a jurisdictional groundwater basin boundary modification request was approved by DWR to modify the boundaries of the Eastern San Joaquin (ESJ) Subbasin and the Tracy Subbasin to align with the City of Lathrop's (City's) City Limit, which is generally contiguous and included within the City's water service area to be fully encompassed within the Tracy Subbasin. The former basin boundaries split the City's service area between two groundwater basins (roughly bisecting the city along the San Joaquin River), requiring two Groundwater Sustainability Agencies (GSAs) (i.e., the City of Lathrop GSA and the Stewart Tract GSA) to cover the City, and the development and implementation of two Groundwater Sustainability Plans (GSPs). This boundary modification demonstrates that the modification promotes continued sustainable groundwater management. This commitment is articulated in the Memorandum of Understanding (MOU) between the City and Reclamation District (RD) 2062 (i.e., the Stewart Tract GSA) that formalizes their intent to form a joint GSA covering the entire City and to coordinate GSP development within the Tracy Subbasin.

The Tracy Subbasin is defined by the areal extent of unconsolidated to semiconsolidated sedimentary deposits that are bounded by the Diablo Range on the west; the Mokelumne and San Joaquin Rivers on the north; the San Joaquin River to the east; and the San Joaquin-Stanislaus County line on the south. The Tracy Subbasin is located adjacent to the Eastern San Joaquin Subbasin on the east and the Delta-Mendota Subbasin on the south. All of the above mentioned subbasins are located within the larger San Joaquin Valley Groundwater Basin. The Tracy Subbasin also lies to the south of the Sacramento Valley Groundwater Basin, Solano Subbasin. The Tracy Subbasin is drained by the San Joaquin River and one of its major westside tributaries; Corral Hollow Creek. The San Joaquin River flows northward into the Sacramento and San Joaquin Delta and discharges into the San Francisco Bay. Local Drainage

The City provides and maintains a system of storm drains, detention basins, and pumping facilities as well as monitoring and control of the operations of the storm drain system. Additionally, the City enforces storm drain regulations established by the US EPA and the State of California.

The City of Lathrop's storm drainage collection system uses pipelines, surface channels and, in some locations, detention basins that store peak flows to direct drainage to the San Joaquin River. The City's documented existing storm drain infrastructure includes approximately 916 inlets, 691 manholes, 21 pump stations, 4 outfalls to the San Joaquin River, 13 detention basins, and 36 miles of storm drain (J.B. Anderson, 2016). For detailed information relating to the City's storm drainage system see Section 3.1 (Stormwater and Drainage).

## Stormwater Quality

Potential hazards to surface water quality include the following nonpoint pollution problems: high turbidity from sediment resulting from erosion of improperly graded construction projects, concentration of nitrates and dissolved solids from agriculture or surfacing septic tank failures, contaminated street and lawn run-off from urban areas, and warm water drainage discharges into cold water streams.

The most critical period for surface water quality is following a rainstorm which produces significant amounts of drainage runoff into streams at low flow, resulting in poor dilution of contaminants in the low

## 5.0 CONSERVATION AND NATURAL RESOURCES

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flowing stream. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels. Besides the greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to streams in low flow conditions.

Urban stormwater runoff was managed as a non-point discharge (a source not readily identifiable) under the Federal Water Pollution Control Amendments of 1972 (PL 92-500, Section 208) until the mid-1980's. However, since then, the Federal Environmental Protection Agency has continued to develop implementing rules which categorize urban runoff as a point source (an identifiable source) subject to National Pollution Discharge Elimination System (NPDES) permits. Rules now affect medium and large urban areas, and further rulemaking is expected as programs are developed to meet requirements of Federal water pollution control laws.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading, vegetation removal, quarrying, logging, and agricultural practices all lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. In slower moving water bodies these same factors often cause a buildup of siltation, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affecting both aquatic resources and flood control efforts.

**303(d) Impaired Water Bodies:** Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

According to the California Water Quality Control Monitoring Council, which is part of California Environmental Protection Agency, Natural Resources, there are many areas within the San Joaquin County which are considered Section 303(d) impaired waterbodies. Those areas in the city and in the regional vicinity of the Planning Area that are impaired are referred as Delta Waterways (Southern Portion) by the Water Quality Control Monitoring Council. This includes 3,125 acres listed as early as 1996 for Chlorpyrifos (Agriculture, Urban Runoff/Storm Sewers), DDT (Agriculture), Diazinon (Agriculture, Urban Runoff/Storm Sewers), Electrical Conductivity (Agriculture), Group A Pesticides (Agriculture), Invasive Species (Source Unknown), Mercury (Resource Extraction), and Unknown Toxicity (Source Unknown).

The City of Lathrop, in collaboration with San Joaquin County, Tracy, Lodi, Manteca, and Patterson prepared a Multi-Agency Post-construction Stormwater Standards Manual to provide consistent guidance for municipal workers, developers and builders in implementing the requirements under the Statewide Small MS4 NPDES permit (2013-0001-DWQ).

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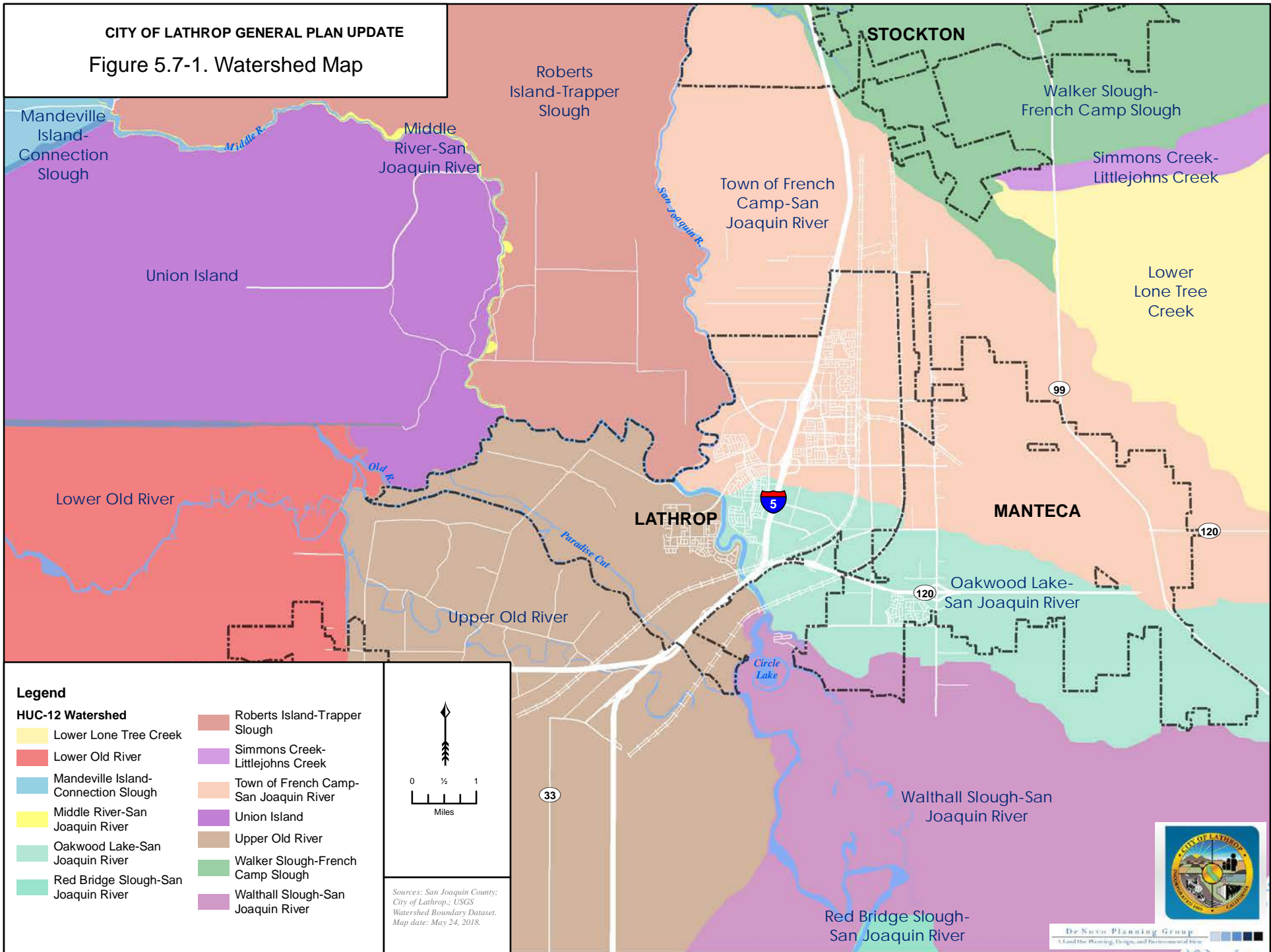
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**CITY OF LATHROP GENERAL PLAN UPDATE**  
**Figure 5.7-1. Watershed Map**



**Legend**

**HUC-12 Watershed**

- |   |   |
|---|---|
|  Lower Lone Tree Creek               |  Roberts Island-Trapper Slough         |
|  Lower Old River                     |  Simmons Creek-Littlejohns Creek       |
|  Mandeville Island-Connection Slough |  Town of French Camp-San Joaquin River |
|  Middle River-San Joaquin River      |  Union Island                          |
|  Oakwood Lake-San Joaquin River      |  Upper Old River                       |
|  Red Bridge Slough-San Joaquin River |  Walker Slough-French Camp Slough      |
|   |  Walthall Slough-San Joaquin River     |



Sources: San Joaquin County;  
 City of Lathrop; USGS  
 Watershed Boundary Dataset.  
 Map date: May 24, 2018.



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## 5.8 SCENIC RESOURCES

This section provides an overview of the visual character, scenic resources, views, and scenic highways that are encountered within the Planning Area and the regional vicinity. For information on historical structures and resources see Section 5.1 (Cultural and Historic Preservation).

### KEY TERMS

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**Scenic Highway Corridor.** The area outside of a highway right-of-way that is generally visible to persons traveling on the highway.

**Scenic Highway/Scenic Route.** A highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and human-made scenic resources and access or direct views to areas or scenes of exceptional beauty (including those of historic or cultural interest). The aesthetic values of scenic routes often are protected and enhanced by regulations governing the development of property or the placement of outdoor advertising. Until the mid-1980's, General Plans in California were required to include a Scenic Highways Element.

**View Corridor.** A view corridor is a highway, road, trail, or other linear feature that offers travelers a vista of scenic areas within a city or county.

### REGULATORY FRAMEWORK

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#### *STATE*

#### **California Department of Transportation – California Scenic Highway Program**

California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change, which would diminish the aesthetic value of lands adjacent to highways. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in Section 263 of the Streets and Highways Code. A list of California's scenic highways and map showing their locations may be obtained from the Caltrans Scenic Highway Coordinators. If a route is not included on a list of highways eligible for scenic highway designation in the Streets and Highways Code Section 263 et seq., it must be added before it can be considered for official designation. A highway may be designated scenic depending on the extent of the natural landscape that can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

#### *LOCAL*

#### **City of Lathrop General Plan**

The following City of Lathrop General Plan policies, which are intended to achieve visual and scenic quality in new developments, apply to the proposed project:

#### **MAJOR POLICIES AND PROPOSALS OF THE GENERAL PLAN**

Achieving Visual and Functional Quality in New Development Several related policies are necessary to assure quality in the functional and aesthetic characteristics of new development, as follows:

## 5.0 CONSERVATION AND NATURAL RESOURCES

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1. Architectural design review should be required of all Planned Developments (PD's), and of all multi-family, office, commercial, institutional and industrial uses.
2. Eligibility for density bonuses under Planned Development applications should be based on objective criteria to be included in the zoning ordinance.
3. Except for density bonuses mandated by State law or by voluntary proposals for households of very low, low and moderate income, density bonuses for Planned Developments within Low Density residential areas should be prohibited. Voluntary proposals which do not meet State standards for a mandated bonus would still be given consideration for the granting of a bonus equal to 10% of the total number of housing units proposed.
4. Features of the urban open space system are to include neighborhood and community recreation parks, pedestrian corridors along arterial streets and boulevards, recreation corridors along natural and man-made drainages and waterways, recreation corridors which connect with major components of the school and park system, a municipal golf course and a municipal marina. Neighborhood parks should be adjacent to and integrated with elementary school sites as well as being freestanding. Community parks should be adjacent to and integrated with high school sites, as well as being freestanding.
5. Major components of the regional open space system are to include a park and recreation corridor along the San Joaquin River, natural waterways and riparian vegetation, a pedestrian and bike trail linking all three Sub-Plan areas, and private marinas open to the public along the San Joaquin River. Access to trails should be designed so as to prevent use by motor vehicles, including motorcycles, motorbikes and similar off-road vehicles. An important component of the open space system will be landscaped corridors on either side of expressways and some arterial streets as a means to buffer residential areas from traffic noise and glare. These corridors may vary in width and design to accommodate such recreation pursuits as walking, biking, golf, and nature study. A corridor for eventually combining bike and pedestrian circulation is proposed separate from the Arterial street system.

### **Goal 4: Quality in the Form, Design, and Functions of the Urban Area Policies:**

#### **Residential Areas:**

1. Architectural design review shall be required of all Planned Developments (PD's), and of all multifamily, office, commercial, institutional and industrial uses.
2. Eligibility for density bonuses under Planned Development or other applications should be based on objective criteria to be included in the zoning ordinance, or as noted in a specific plan.
3. Multi-family projects shall include landscaped open space in addition to yard areas required by the zoning ordinance, to be developed for the common recreation use of tenants. Minimum facilities may be required for common recreation areas. Examples include tot lots for pre-school children, and passive recreation areas for lounging, sun bathing, barbecuing, quiet conversation and reading, including area to be shaded by trees and shade structures.
4. Where multi-story housing units are proposed adjacent to existing or planned Low Density areas, building elevations and the location of windows, balconies and air conditioning units above the first story shall be reviewed by the City to assure visual compatibility and residential privacy.

5. Multi-family site development and maintenance shall be in accordance with a comprehensive landscape development plan, including automatic irrigation.

### **Commercial and Industrial Areas:**

1. Major features for the City Center would include the following:
  - a. Application of an architectural review process for all new building and remodeling.
  - b. Development of central and bordering streets as landscaped corridors. Examples of design features include angle parking, mid-block crosswalks, street furniture, tree planting and complementary building facades.
  - c. Off-street parking to satisfy the need for all-day static parking of owners, managers and employees of downtown businesses and public service activities, in order to release onstreet and off-street spaces to businesses for customers.
  - d. Encouragement of above ground floor residential use in support of the City Center as a major activity center during evenings.
  - e. Encouragement of business and medically related office development at the periphery rather than at the core of the City Center.
2. The visual interface between commercial/industrial areas and residential areas shall be designed and developed so as to avoid obtrusive visual impacts of commercial or industrial activities on nearby residential areas.
3. All outdoor storage areas shall be visually screened with ornamental fencing or walls, and landscaping.
4. Street trees and frontage landscaping, with automatic irrigation, shall be provided for all commercial sites outside of the CBD, and may be required by the City within the City Center. Shade trees shall be provided within off-street parking areas as determined under site plan review.

### **Urban Open Space System:**

1. Features of the urban open space system should include neighborhood and community recreation parks, park and recreation corridors along natural and man-made drainages and waterways, recreation corridors which connect with major components of the park system, and a municipal marina. Neighborhood parks should be adjacent to and integrated with elementary school sites as well as being free-standing. Community parks should be adjacent to and integrated with junior high, high school and college sites, as well as being freestanding.
2. Major components of the regional open space system should include natural waterways and riparian vegetation south of Route 120 close to the San Joaquin River, a pedestrian and bike trail linking all three Sub-Plan areas, and private marinas open to the public along the San Joaquin River and Old River. Access to trails should be designed so as to prevent use by motor vehicles, including motorcycles, motorbikes and similar off-road vehicles.

3. An important component of the system will be landscaped open space corridors on either side of expressways and some arterial streets as a means to buffer residential areas from traffic noise and glare. These corridors may vary in width and design to accommodate such recreation pursuits as walking, biking, golf, and nature study. A corridor for eventually combining light rail, bike and pedestrian circulation is proposed separate from the Expressway and Arterial street system. Until light rail becomes feasible, the corridor could be used for busses.

### **Fish & Wildlife Habitat:**

6. The visual amenities of water and its potential as wildlife habitat are to be reflected where feasible in all developments by the inclusion of bodies of water as components of urban form. Such bodies of water may be in the form of lakes, ponds, lagoons, simulated streams or similar features which can be integrated by design within recreation open space corridors, parks, commercial and residential areas and public sites. The multi-purposes use of water bodies for surface water drainage, flood control, wastewater reclamation, wildlife management, recreation and visual amenity is encouraged.

### **City of Lathrop Zoning Ordinance**

Chapter 17.92, Landscaping and Screening Standards, of the City Zoning Ordinance contains several sections that regulate aesthetic or visual standards for development in the City. These include standards for landscaping of commercial and industrial developments; requirements for the contents of landscape plans; street, road, and parkway landscaping standards; requirements for a tree and shrub schedule; and planting and maintenance standards. Some of these standards would be applicable to the proposed project, including the following:

- A landscape plan is required for all new residential, commercial, and industrial developments. These plans would include landscape materials, trees, shrubs, groundcover, turf, etc.
- Parking lots located on the proposed project site shall include a landscape strip buffer installed continuously along the property line.
- All outside storage areas shall be screened so as not to be visible from adjacent properties and public rights-of-way. Screening shall be a minimum of six feet in height, and consist of a solid material. Outside storage is not permitted in front or street side yards, or in front of structures.
- Roof mounted mechanical equipment, tanks, ventilating fans and similar equipment shall be screened from the view of adjacent properties and public rights-of-way at grade. The required screens shall be architecturally compatible with the building or structure on which they are used. All streets, roads, and parkways within the City shall meet the following standards:
- In residential, commercial and industrial zones, trees shall be planted in accordance with the landscape and screening standards. In addition, the following requirements shall apply:
  - Trees shall be planted between four feet and ten feet from a public right-of-way. Trees should also be a minimum of ten feet from any driveway.

- Trees planted on street frontages where noise attenuation is required shall be planted in a minimum five-foot landscape strip or in tree wells. Each tree shall be spaced no farther than 20 feet apart.

## ENVIRONMENTAL SETTING

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### Regional Scenic Resources

Visual resources are generally classified into two categories: scenic views and scenic resources. Scenic views are elements of the broader viewshed such as mountain ranges, valleys, waterways, and ridgelines. They are usually mid-ground or background elements of a viewshed that can be seen from a range of viewpoints, often along a roadway or other corridor. Scenic resources are specific features of a viewing area (or viewshed) such as trees, rock outcroppings, and historic buildings. They are specific features that act as the focal point of a viewshed and are usually foreground elements.

Aesthetically significant features occur in a diverse array of environments within the region, ranging in character from urban centers to rural agricultural lands to natural water bodies. Features of the built environment that may also have visual significance include individual or groups of structures that are distinctive due to their aesthetic, historical, social, or cultural significance or characteristics. Examples of the visually significant built environment may include bridges or overpasses, architecturally appealing buildings or groups of buildings, landscaped freeways, and a location where a historic event occurred.

### Scenic Highways and Corridors

Scenic highways and corridors make major contributions to the quality of life enjoyed by the residents of a region. The development of community pride, the enhancement of property values, and the protection of aesthetically-pleasing open spaces reflecting a preference for the local lifestyle are all ways in which scenic corridors are valuable to residents.

Scenic highways and corridors can also strengthen the tourist industry. For many visitors, highway corridors will provide their only experience of the region. Enhancement and protection of these corridors ensures that the tourist experience continues to be a positive one and, consequently, provides support for the tourist-related activities of the region's economy.

**Scenic Highways:** A scenic highway is generally defined by Caltrans as a public highway that traverses an area of outstanding scenic quality, containing striking views, flora, geology, or other unique natural attributes. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

Only one highway section in San Joaquin County is listed as a Designated Scenic Highway by the Caltrans Scenic Highway Mapping System; the segment of State Route 580 from Interstate 5 to State Route 205. This route traverses the edge of the Coast Range to the west and Central Valley to the east. The City of Lathrop is not visible from this roadway segment.

**Scenic Corridors:** A scenic corridor is the view from the road that may include a distant panorama and/or the immediate roadside area. A scenic corridor encompasses the outstanding natural features and landscapes that are considered scenic. It is the visual quality of the man-made or natural environments within a scenic corridor that are responsible for its scenic value. Commonly, the physical limits of a scenic corridor are broken down into foreground views (zero to one quarter mile) and distant views (over one

## 5.0 CONSERVATION AND NATURAL RESOURCES

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quarter mile). In addition to distinct foreground and distant views, the visual quality of a scenic corridor is defined by special features, which include:

- Focal points - prominent natural or man-made features which immediately catch the eye.
- Transition areas - locations where the visual environment changes dramatically.
- Gateways - locations which mark the entrance to a community or geographic area.

The City of Lathrop General Plan does not specifically designate any scenic corridors within the city.

### Other Scenic Resources Areas

The City of Lathrop General Plan does not specifically designate any scenic viewsheds within the city. The existing Lathrop General Plan does however note Lathrop's scenic environmental resources including the San Joaquin River environment, and scenic vistas of the Coast Range and the Sierra.

**Water Resources:** Water resources are important visual resources that draw tourists to the area for recreational opportunities, provide critical habitat, and provide for scenic areas within and surrounding urban areas. The most visually significant water body in the region is the San Joaquin River which bisects the city.

**Agricultural Resources:** Much of the undeveloped land within the City Limits, SOI, and areas surrounding the urbanized portion of Lathrop is predominantly farmland, including alfalfa, orchard, row crops, and pasture. Agricultural lands have become important visual resources that contribute to the community identity of Lathrop, surrounding areas, and the Valley Region. Agricultural lands provide for visual relief from urbanized areas and act as community separators to nearby urban areas.

### REFERENCES

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California Department of Transportation. 2018. Officially Designated State Scenic Highways. Available: <http://www.dot.ca.gov/hq/LandArch/scenic/schwy1.html>.

## 5.9 AGRICULTURAL RESOURCES

This section provides an overview of the agricultural crops in San Joaquin County and the City of Lathrop. Information in this section is derived primarily from the California Important Farmlands Map (California Department of Conservation, 2014), the California Land Conservation (Williamson) Act Status Report (California Department of Conservation, 2016), the San Joaquin County Agricultural Report (San Joaquin County Agricultural Commissioner, 2016-2017), and the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2018).

### REGULATORY FRAMEWORK

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#### *FEDERAL*

#### **Farmland Protection Policy Act**

The Farmland Protection Policy Act (FPPA) is intended to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It ensures that, to the extent practicable, federal programs are compatible with state and local units of government as well as private programs and policies to protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for crop production. In fact, the land can be forest land, pastureland, cropland, or other land but does not include water bodies or land developed for urban land uses (i.e., residential, commercial, or industrial uses).

The Natural Resource Conservation Service (NRCS) administers the Farmland Protection Program. NRCS uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on proposed sites of federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. The assessment is completed on form AD-1006, Farmland Conversion Impact Rating. The sponsoring agency completes the site assessment portion of the AD-1006, which assesses non-soil related criteria such as the potential for impact on the local agricultural economy if the land is converted to non-farm use and compatibility with existing agricultural use.

#### *STATE*

#### **Williamson Act**

The California Land Conservation Act of 1965, commonly known as the Williamson Act, was established based on numerous State legislative findings regarding the importance of agricultural lands in an urbanizing society. Policies emanating from those findings include those that discourage premature and unnecessary conversion of agricultural land to urban uses and discourage discontinuous urban development patterns, which unnecessarily increase the costs of community services to community residents.

The Williamson Act authorizes each County to establish an agricultural preserve. Land that is within the agricultural preserve is eligible to be placed under a contract between the property owner and County that would restrict the use of the land to agriculture in exchange for a tax assessment that is based on the yearly production yield. The contracts have a 10-year term that is automatically renewed each year, unless

the property owner requests a non-renewal or the contract is cancelled. If the contract is cancelled the property owner is assessed a fee of up to 12.5 percent of the property value.

### **Farmland Security Zones**

In 1998 the state legislature established the Farmland Security Zone (FSZ) program. FSZs are similar to Williamson Act contracts, in that the intention is to protect farmland from conversion. The main difference however, is that the FSZ must be designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. The term of the contract is a minimum of 20 years. The property owners are offered an incentive of greater property tax reductions when compared to the Williamson Act contract tax incentives; the incentives were developed to encourage conservation of prime farmland through FSZs. The non-renewal and cancellation procedures are similar to those for Williamson Act contracts.

### **Delta Reform Act**

The California Legislature passed the Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992 (Delta Protection Act) on September 23, 1992 and it was updated in 2009 and renamed the Delta Reform Act. The Act provided the means to prepare the Land Use and Resource Management Plan (2010) for the Primary Zone of the Delta. The Management Plan includes policies and recommendations with the overall goal to “protect, maintain, and where possible, enhance and restore the overall quality of the Delta environment, including but not limited to agriculture, wildlife habitat, and recreational activities.” The following are the applicable policies with relation to agriculture:

Policy P-3. New non-agriculturally oriented residential, recreational, commercial, habitat, restoration or industrial development shall ensure that appropriate buffer areas are provided by those proposing new development to prevent conflicts between any proposed use and existing adjacent agricultural parcels. Buffers shall adequately protect the integrity of land for existing and future agricultural uses and shall not include uses that conflict with agricultural operations on adjacent agricultural lands. Appropriate buffer setbacks shall be determined in consultation with local Agricultural Commissioners, and shall be based on applicable general plan policies and criteria included in Right-to-Farm Ordinances adopted by local jurisdictions.

### **California Government Code Section 560643**

This section of the Government Codes defines “Prime agricultural land” as follows:

- Prime agricultural land means an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets any of the following qualifications:
  - Land that qualifies, if irrigated, for rating as class I or class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.
  - Land that qualifies for rating 80 through 100 Storie Index Rating.
  - Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the



United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.

- Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will re-turn during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars (\$400) per acre.
- Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars (\$400) per acre for three of the previous five calendar years.

### *LOCAL*

#### **City of Lathrop General Plan**

The existing City of Lathrop General Plan provides a policy framework for the preservation and conservation of agricultural resources.

#### **Goal No. 5 – Enhancing the Quality of Life, Agricultural Land**

Policies:

- 1 notes that the extent of urbanization called for in the General Plan is based on the need to accommodate population and economic growth. Further urbanization outside of the General Plan Planning Area is discouraged to allow for preservation of agriculture outside of the three sub-plan areas of the City of Lathrop.
- 2 encourages exclusive agricultural zoning be continued on lands outside of the three sub-plan areas.
- 3 encourages a comprehensive approach to cancellation of Williamson Act contracts.
- 4 discourages extension of sewer and water service to lands outside of the three sub-plan areas (Lathrop General Plan, p.1-11).

#### **City of Lathrop Municipal Code-Agricultural Land Preservation (Title 15.48.040)**

The City of Lathrop Right-to-Farm Ordinance (15.48.030) of the City's Agricultural Land Disclosure Statement (15.48.040), was adopted in 1991 to conserve and protect agricultural land in the City and protect agricultural landowners from nuisance complaints related to cultivation, irrigation, spraying, fertilizing, and other activities related to normal agricultural operations. A disclosure statement is required whenever adjacent property is sold or building permit application is submitted, notifying the prospective buyer/applicant of adjacent agricultural land and possible discomforts and nuisance factors related to agricultural operations. The focus of the ordinance is to reduce the loss of agricultural resources in the City by clarifying the circumstances under which agricultural operations may be considered a nuisance.

#### **California Farmland Trust**

The California Farmland Trust is a private, non-profit, regional land trust working in Sacramento, San Joaquin, Stanislaus and Merced Counties of California. The organization works to preserve farmland through the purchase of agricultural conservation easements from willing landowners.

### **City of Lathrop Agricultural Mitigation**

The City of Lathrop adopted an agricultural mitigation program in 2005, as a result of the settlement of a water transfer lawsuit against the cities of Lathrop, Manteca, and Tracy by the Sierra Club. The mitigation program adopted by the City of Lathrop required that future development pay \$2,000/acre for agricultural mitigation. Half of the mitigation (\$1,000/acre) will be paid to the Central Valley Farmland Trust (CVFT). The other \$1,000/acre will be collected by the City of Lathrop and may be passed to the CVFT or other trust, or may be retained by the City of Lathrop to be applied to local easements or other agricultural mitigation. This fee structure included an automatic escalator, so the fee as of March 2018 is \$2,825.45 per gross acre. Since 2005 the City of Lathrop has entered into several Settlement Agreements related to Agricultural Mitigation which is summarized below:

1. River Islands was required to pay \$2,759 per acre.
2. Central Lathrop Specific Plan (CLSP) was required to pay \$3,762 per acre.
3. All other developments in the City are required to pay \$2,508 per acre.

These Agricultural Mitigation amounts discussed above are in addition to fees imposed as part of the San Joaquin Multi-Species Conservation Plan (SJMSCP). The adopted SJMSCP includes a commitment to spend 75% of the dollars collected on lands which would benefit agricultural resources. The typical SJMSCP fee amounts to approximately \$15,000 per acre, meaning \$11,250 per acre is assigned to purchase easements on lands with Agricultural Resources. The SJMSCP fees are considered a separate Mitigation Fee obligation from the Agricultural Mitigation fees, but in many cases serve the same purpose. The SJMSCP is a voluntary program in lieu of conducting independent biological assessments. Most development proponents chose to comply with the SJMSCP (San Joaquin LAFCO, 2016)

### **Local Agency Formation Commission Boundary Controls**

The San Joaquin Local Agency Formation Commission (LAFCO) is responsible for coordinating orderly amendments to local jurisdictional boundaries, including annexations. Annexation to the City of Lathrop would be subject to LAFCO approval, and LAFCO's decision is governed by state law (Gov't Code § 56001 et seq.) and the local LAFCO Policies and Procedures. State law requires LAFCOs to consider agricultural land and open space preservation in all decisions related to expansion of urban development. LAFCO's definition of Prime agricultural land refers to California Government Code Section 56064.3, which is described above under the State Regulatory Setting.

### **San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP)**

The SJMSCP provides comprehensive measures for compensation and avoidance of impacts on various biological resources, which includes ancillary benefits to agricultural resources. For instance, many of the habitat easements that are purchased or facilitated by the SJMSCP program are targeted for the protection of Swainson's hawk or other sensitive species habitat that are dependent on agricultural lands. The biological mitigation for these species through the SJMSCP includes the purchase of certain conservation easements for habitat purposes; however, the conservation easements are placed over agricultural land, such as alfalfa and row crops (not vines or orchards). As such, SJMSCP fees paid to SJCOG as administrator of the SJMSCP will result in the preservation of agricultural lands in perpetuity.

## ENVIRONMENTAL SETTING

### San Joaquin County Agriculture

San Joaquin County occupies a central location in California's vast agricultural heartland, the San Joaquin Valley. The County's Agricultural Commissioner's most recent published Agricultural Report (2017) contains the following information relating to agriculture in the county.

San Joaquin County has a total land area of 1,391 square miles. The total acreage of crop land in the county is approximately 517,918. The gross value of agricultural production in San Joaquin County for 2017 was 2,527,989,000, which represents an 9.31 percent increase from 2016 when gross production value totaled \$2,337,922,000. Table 5.9-1 lists the top commodities in San Joaquin County in 2015 2016 and 2017.

**TABLE 5.9-1: SUMMARY COMPARISON OF CROP VALUES**

PRODUCT TYPE	2015 VALUE IN DOLLARS	2016 VALUE IN DOLLARS	2017 VALUE IN DOLLARS
Field Crops	\$277,101,000	\$174,309,000	\$208,839,000
Vegetable Crops	\$325,169,000	\$280,065,000	\$255,928,000
Fruit and Nut Crops	\$1,383,287,000	\$1,221,731,000	\$1,362,531,000
Nursery Products	\$104,820,000	\$107,387,000	\$117,294,000
Livestock and Poultry	\$182,513,000	\$127,272,000	\$122,270,000
Livestock and Poultry Products	\$435,880,000	\$398,967,000	\$429,910,000
Seed Crops	\$3,615,000	\$3,763,000	\$4,671,000
Apiary Products	\$20,532,000	\$24,428,000	\$26,546,000

SOURCE: SAN JOAQUIN COUNTY AGRICULTURAL REPORT, 2015-2017.

### Agricultural Capability

The California Department of Conservation Farmland Mapping and Monitoring Program identifies lands that have agriculture value and maintains a statewide map of these lands called the Important Farmlands Inventory (IFI). IFI classifies land based upon the productive capabilities of the land, rather than the mere presence of ideal soil conditions.

The suitability of soils for agricultural use is just one factor for determining the productive capabilities of land. Suitability is determined based on many characteristics, including fertility, slope, texture, drainage, depth, and salt content. A variety of classification systems have been devised by the state to categorize soil capabilities. The two most widely used systems are the Capability Classification System and the Storie Index. The Capability Classification System classifies soils from Class I to Class VIII based on their ability to support agriculture with Class I being the highest quality soil. The Storie Index considers other factors such as slope and texture to arrive at a rating. The IFI is in part based upon both of these two classification systems.

### Soil Capability Classification

The Soil Capability Classification System takes into consideration soil limitations, the risk of damage when soils are used, and the way in which soils respond to treatment. Capability classes range from Class 1 soils, which have few limitations for agriculture, to Class 8 soils that are unsuitable for agriculture. Generally, as the rating of the capability classification increases, yields and profits are more difficult to obtain. A general description of soil classifications, as defined by the Natural Resources Conservation Service (NRCS) is provided in Table 5.9-2 below.

## 5.0 CONSERVATION AND NATURAL RESOURCES

A Custom Soil Survey was completed for the Planning Area using the NRCS Web Soil Survey program. Table 5.9-3 identifies the soils and soil classifications found in the Planning Area. The NRCS Soils Map is provided on Figure 5.5-2.

**TABLE 5.9-2: SOIL CAPABILITY CLASSIFICATION**

<i>CLASS</i>	<i>DEFINITION</i>
1	Soils have slight limitations that restrict their use.
2	Soils have moderate limitations that restrict choice plants or that require moderate conservation practices.
3	Soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.
4	Soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.
5	Soils are not likely to erode but have other limitations; impractical to remove that limits their use largely to pasture or range, woodland, or wildlife habitat.
6	Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat.
7	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat.
8	Soils and landforms have limitations that preclude their use for commercial plans and restrict their use to recreation, wildlife habitat, water supply, or aesthetic purposes.

SOURCE: USDA SOIL CONSERVATION SERVICE.

**TABLE 5.9-3: SOIL CLASSIFICATION**

<i>NAME</i>	<i>ACRES</i>	<i>PERCENT OF PLANNING AREA</i>	<i>CAPABILITY CLASSIFICATION*</i>
Bigani loamy coarse sand, partially drained, 0 to 2 percent slopes	162.1	1.2%	3-4
Boggiano clay loam, 0 to 2 percent slopes	5.4	0.0%	2-4
Columbia fine sandy loam, channeled, partially drained, 0 to 2 percent slopes, frequently flooded	79.8	0.6%	2-4
Columbia fine sandy loam, clayey substratum, partially drained, 0 to 2 percent slopes	1,385.8	10.2%	2-4
Columbia fine sandy loam, drained, 0 to 2 percent slopes	127.0	0.9%	4-4
Columbia fine sandy loam, partially drained, 0 to 2 percent slopes, occasionally flooded	328.7	2.4%	2-4
Delhi loamy sand, 0 to 2 percent slopes, MLRA 17	226.3	1.7%	3-4
Dello clay loam, drained, 0 to 2 percent slopes, overwashed	109.3	0.8%	3-4
Dello loamy sand, drained, 0 to 2 percent slopes	50.5	0.4%	3-4
Dello sand, partially drained, 0 to 2 percent slopes, occasionally flooded	14.5	0.1%	3-4
Dello sandy loam, clayey substratum, drained, 0 to 2 percent slopes	267.5	2.0%	3-4
Egbert silty clay loam, partially drained, 0 to 2 percent slopes	2,356.8	17.4%	2-4
Grangeville clay loam, partially drained, 0 to 2 percent slopes	330.5	2.4%	2-4
Grangeville fine sandy loam, partially drained, 0 to 2 percent slopes	333.1	2.5%	2-4
Guard clay loam, drained, 0 to 2 percent slopes	148.9	1.1%	2-4

## 5.0 CONSERVATION AND NATURAL RESOURCES

NAME	ACRES	PERCENT OF PLANNING AREA	CAPABILITY CLASSIFICATION*
Honcut sandy loam, 0 to 2 percent slopes	17.1	0.1%	2-4
Manteca fine sandy loam, 0 to 2 percent slopes	653.2	4.8%	3-4
Merritt silty clay loam, partially drained, 0 to 2 percent slopes	1,266.0	9.3%	2-4
Merritt silty clay loam, partially drained, 0 to 2 percent slopes, occasionally flooded	307.7	2.3%	2-4
Scribner clay loam, partially drained, 0 to 2 percent slopes	121.0	0.9%	2-3
Timor loamy sand, 0 to 2 percent slopes	471.9	3.5%	3-4
Tinnin loamy coarse sand, 0 to 2 percent slopes	1,588.5	11.7%	3-4
Urban land	1,164.7	8.6%	8-8
Valdez silt loam, organic substratum, partially drained, 0 to 2 percent slopes	66.5	0.5%	3-4
Veritas fine sandy loam, 0 to 2 percent slopes	1,560.8	11.5%	2-4
Water	433.7	3.2%	--
<b>Total</b>	<b>13,577.3</b>	<b>100.0%</b>	

\* *DEPICTS IRRIGATED VS NON IRRIGATED CAPABILITY RATING*

*SOURCE: NRCS CUSTOM WEB SOIL SURVEY, 2018.*

### Important Farmlands

The Farmland Mapping and Monitoring Program (FMMP) is a farmland classification system administered by the California Department of Conservation. Important farmland maps are based on the Land Inventory and Monitoring criteria, which classify a land's suitability for agricultural production based on both the physical and chemical characteristics of soils, and the actual land use. The system maps five categories of agricultural land, which include important farmlands (prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance) and grazing land, as well as three categories of non-agricultural land, which include urban and built-up land, other land, and water area.

The State of California Department of Conservation Farmland Mapping and Monitoring Program and San Joaquin County GIS data were used to illustrate the farmland characteristics for the Planning Area. Farmlands in the Planning Area are identified in Table 5.9-4 and are shown on Figure 5.9-1. The farmland classifications for the site and surrounding area are described below.

**TABLE 5.9-4: FARMLAND CLASSIFICATION**

LAND CLASSIFICATION	CITY	SOI	TOTAL	% OF TOTAL
D - Urban/Built Up Land	4,220.8	221.7	4,442.50	33%
L - Farmland of Local Importance	2,612.1	182.1	2,794.20	21%
NV – Nonagricultural or Natural Vegetation	276.5	2.3	278.80	2%
P – Prime Farmland	4,179.5	104.4	4,283.90	32%
R – Rural Residential	66.5	9.8	76.30	1%
S – Farmland of Statewide Importance	823.9	85.3	909.20	7%
U - Unique Farmland	172.4	1.1	173.50	1%
sAC - Semi-agricultural and Rural Commercial Land	261.8	51.6	313.40	2%
V - Vacant or Disturbed Land	270.1	30.0	300.10	2%

*SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION; NRCS CUSTOM WEB SOIL SURVEY, 2018.*

## 5.0 CONSERVATION AND NATURAL RESOURCES

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**Prime Farmland** is farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. Approximately 4,283.90 acres of Prime Farmland is located within the Panning Area.

**Farmland of Statewide Importance** is farmland with characteristics similar to those of prime farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. Approximately 909.20 acres of Farmland of Statewide Importance is located within the Panning Area.

**Unique Farmland** is land which does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, that has been used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use. Approximately 173.50 acres of Unique Farmland is located within the Panning Area.

**Farmland of Local Importance** is land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee. Approximately 2,794.20 acres of Farmland of Local Importance is located within the Panning Area.

**Urban and Built-up Land** includes Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes. Approximately 4,442.50 acres of Urban and Built-Up Land is located within the Panning Area.

**Rural Residential Land** has a building density of less than 1 structure per 1.5 acres, but with at least one structure per 10 acres. Approximately 76.30 acres of Rural Residential Land is located within the Panning Area.

**Vacant or Disturbed Land** consists of open field areas that do not qualify for an agricultural category, mineral and oil extraction areas, and rural freeway interchanges. Approximately 300.10 acres of Vacant or Disturbed Land is located within the Panning Area.

**Nonagricultural and Natural Vegetation** covers heavily wooded, rocky or barren areas, riparian and wetland areas, grassland areas which do not qualify for Grazing Land due to their size or land management restrictions, and small water bodies. Constructed wetlands are also included in this category. Approximately 278.80 acres of Nonagricultural and Natural Vegetation Land is located within the Panning Area.

**Semi-Agricultural and Rural Commercial Land** includes farmsteads, agricultural storage and packing sheds, unpaved parking areas, composting facilities, equine facilities, firewood lots, and campgrounds. Approximately 313.40 acres of Semi-Agricultural and Rural Commercial Land is located within the Panning Area.

### Farmland Conversion in San Joaquin County

Data from the Department of Conservation indicates that approximately 1,245 acres of Prime Farmland in the County was developed for other uses between 2014 and 2016, resulting in an existing total of 381,634 acres of Prime Farmland (51 percent of agricultural land). The remaining agricultural land is comprised of Farmland of Statewide Importance (11 percent), Unique Farmland (10 percent), Farmland of Local Importance (10 percent), and Grazing Land (18 percent). The types and acreages of farmland in 2014 and 2016 are shown below in Table 5.9-5.

**TABLE 5.9-5: SAN JOAQUIN COUNTY FARMLANDS SUMMARY AND CHANGE BY LAND USE CATEGORY**

LAND USE CATEGORY	2014-16 ACREAGE CHANGES					
	Total Acreage Inventoried		Acres Lost	Acres Gained	Total Acreage	Net Acreage
	2014	2016	(-)	(+)	Changed	Changed
Prime Farmland	382,879	381,634	4,338	3,093	7,431	-1,245
Farmland of Statewide Importance	82,271	82,618	1,189	1,536	2,725	347
Unique Farmland	76,415	81,920	830	6,335	7,165	5,505
Farmland of Local Importance	73,429	68,903	9,150	4,624	13,774	-4,526
IMPORTANT FARMLAND SUBTOTAL	614,994	615,075	15,507	15,588	31,095	81
Grazing Land	132,950	129,760	3,385	195	3,580	-3,190
AGRICULTURAL LAND SUBTOTAL	747,944	744,835	18,892	15,783	34,675	-3,109
Urban and Built-up Land	93,888	95,329	365	1,806	2,171	1,441
Other Land	59,004	60,602	1,482	3,080	4,562	1,598
Water Area	11,766	11,836	235	305	540	70
TOTAL AREA INVENTORIED	912,602	912,602	20,974	20,974	41,948	0

SOURCE: CA DEPARTMENT OF CONSERVATION, DIVISION OF LAND RESOURCE PROTECTION TABLE A-30, 2014-2016.

### Farmland Conservation

The Williamson Act authorizes each County to establish an agricultural preserve. Land that is within the agricultural preserve is eligible to be placed under a contract between the property owner and County that would restrict the use of the land to agriculture in exchange for a tax assessment that is based on the yearly production yield. The contracts have a 10-year term that is automatically renewed each year, unless the property owner requests a non-renewal or the contract is cancelled. If the contract is cancelled the property owner is assessed a fee of up to 12.5 percent of the property value.

Table 5.9-6 shows lands within the city and SOI that are under a Williamson Act contract and the status of the contract. Figure 5.9-2 shows Williamson Act Contracts within the city and Planning Area.

**TABLE 3.9-6: SUMMARY OF WILLIAMSON ACT CONTRACTS (CITY LIMITS AND SOI)**

CONTRACT LOCATION AND TYPE	TOTAL ACRES
WA-Non-Prime	228.9
Total	228.9

FARMLAND MAPPING AND MONITORING PROGRAM, SAN JOAQUIN COUNTY, 2014.

### REFERENCES

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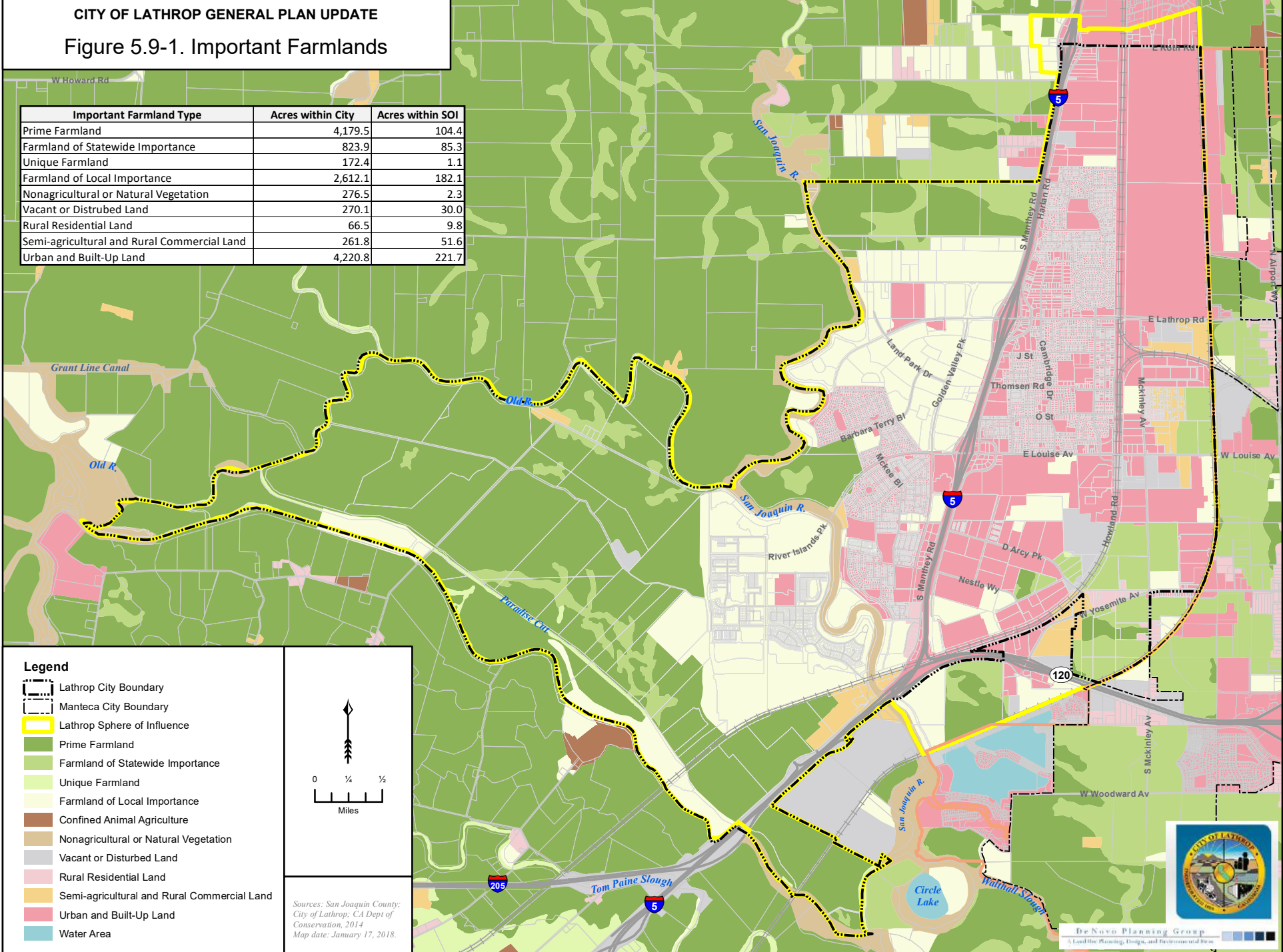
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- California Department of Conservation. FY 2015/2016. California Land Conservation (Williamson) Act Status Report.
- California Department of Conservation. 2017. California Important Farmlands Map. Farmland Mapping and Monitoring Program, San Joaquin County, 2017;



CITY OF LATHROP GENERAL PLAN UPDATE

Figure 5.9-1. Important Farmlands

Important Farmland Type	Acres within City	Acres within SOI
Prime Farmland	4,179.5	104.4
Farmland of Statewide Importance	823.9	85.3
Unique Farmland	172.4	1.1
Farmland of Local Importance	2,612.1	182.1
Nonagricultural or Natural Vegetation	276.5	2.3
Vacant or Disturbed Land	270.1	30.0
Rural Residential Land	66.5	9.8
Semi-agricultural and Rural Commercial Land	261.8	51.6
Urban and Built-Up Land	4,220.8	221.7



- Legend**
- Lathrop City Boundary
  - Manteca City Boundary
  - Lathrop Sphere of Influence
  - Prime Farmland
  - Farmland of Statewide Importance
  - Unique Farmland
  - Farmland of Local Importance
  - Confined Animal Agriculture
  - Nonagricultural or Natural Vegetation
  - Vacant or Disturbed Land
  - Rural Residential Land
  - Semi-agricultural and Rural Commercial Land
  - Urban and Built-Up Land
  - Water Area

0 1/4 1/2  
Miles

North Arrow

Sources: San Joaquin County;  
City of Lathrop; CA Dept of  
Conservation, 2014  
Map date: January 17, 2018.

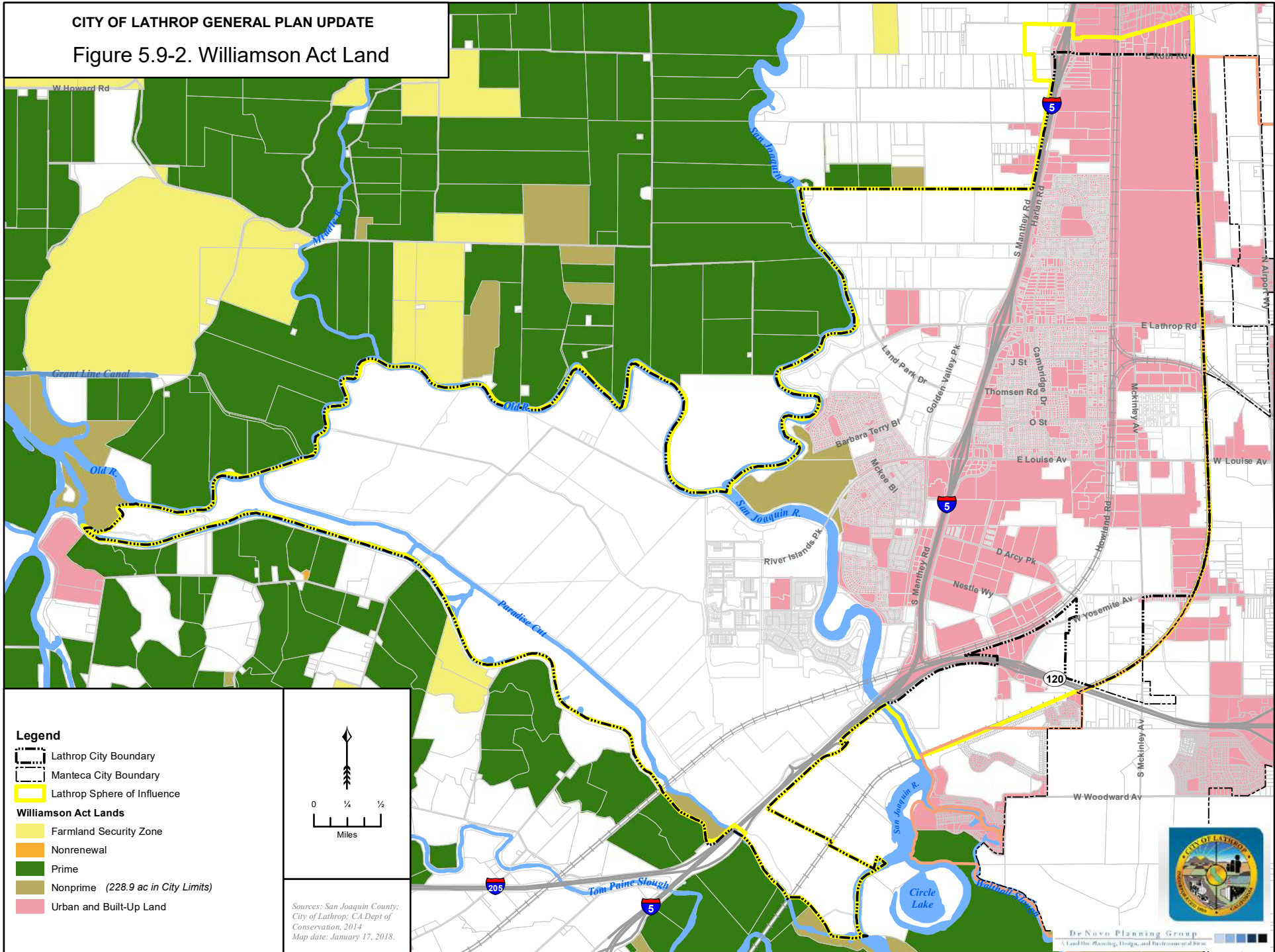


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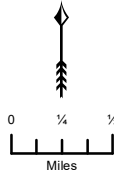
CITY OF LATHROP GENERAL PLAN UPDATE

Figure 5.9-2. Williamson Act Land



Legend

- Lathrop City Boundary
- Manteca City Boundary
- Lathrop Sphere of Influence
- Williamson Act Lands**
- Farmland Security Zone
- Nonrenewal
- Prime
- Nonprime (228.9 ac in City Limits)
- Urban and Built-Up Land



Sources: San Joaquin County;  
City of Lathrop; CA Dept of  
Conservation, 2014  
Map date: January 17, 2018.



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## 6.0. ENVIRONMENTAL JUSTICE

This section addresses environmental justice in the City of Lathrop, provides an overview of existing environmental conditions for disadvantaged communities in Lathrop, and describes components of the built environment that may impact human health disproportionately. Environmental Justice is related to a number of environmental categories and topics. Therefore, this section of the Lathrop General Plan Existing Conditions Report contains numerous references to other sections in this report. For example, conditions regarding transit options, bicycle facilities, and pedestrian facilities are addressed in greater detail in Section 2.0 (Transportation and Circulation). Parks and recreational facilities are discussed in Section 3.0 (Community Services and Facilities). Hazards and hazardous materials and applicable regulations are addressed in Section 4.0 (Hazards, Safety, and Noise). Air quality and air quality regulations as well as water quality and water quality regulations, are addressed in Section 5.0 (Conservation).

### 6.1 ENVIRONMENTAL JUSTICE- BACKGROUND AND OVERVIEW

#### BACKGROUND

The negative effects of environmental degradation and pollution are well-documented and include severe impacts to human health and longevity, depending on the level of exposure. Within the United States, certain communities have historically been disproportionately disadvantaged by environmental threats and the negative health impacts of environmental degradation. These disproportionately disadvantaged communities include, but are not limited to: communities of color, low-income communities, members of tribal nations, and immigrant communities. Increased exposure to environmental pollutants, unsafe drinking water, and contaminated facilities/structures have contributed to poorer health outcomes for these communities. Local and regional policies, intersectional structural inequalities, land-use planning, enforcement deficiencies, and lack of community engagement and advocacy are all critical facets of the disproportionate layout of negative environmental externalities. The field of environmental justice is focused on addressing these disproportionate impacts and improving the wellness of all communities by bolstering community planning efforts and promoting the fair treatment of all people regardless of their race, ethnicity, national origin, or income.

Environmental Justice practices across the United States have worked to improve the status of disadvantaged communities, through effective planning and policy decisions. Effective planning and policy decisions at the federal, state, and local levels can help ensure that equal protection from environmental hazards is prioritized for all people.

#### DEFINING DISADVANTAGED COMMUNITIES

The term ‘Disadvantaged Community’ is a broad designation that may include any community that lacks appropriate resources, or is confronted with any exceptional economic, health, or environmental burden. In relation to environmental justice, disadvantaged communities are typically those communities that disproportionately face the burdens of environmental hazards. The *Planning for Healthy Communities Act of 2016 (Senate Bill 1000)*, establishes a set criterion for identifying a Disadvantaged Community (DAC). The definition of a DAC for the purposes of the bill is as follows:

*“An area identified by the California Environmental Protection Agency (CalEPA) pursuant to Section 39711 of the Health and Safety Code or an area that is a low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation.”*

## 6.0 ENVIRONMENTAL JUSTICE

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California cities that are updating two or more elements of their General Plans concurrently must include environmental justice if one or more disadvantaged communities is identified within their Planning Area. Using the CalEPA definition of a disadvantaged community, Senate Bill 1000 provides stakeholders with the CalEnviroScreen 3.0 map to identify communities that are disproportionately disadvantaged by environmental hazards. The CalEnviroScreen 3.0 map is a science-based tool developed by the Office of Environmental Health Hazards Assessment on behalf of CalEPA that uses existing environmental, health, and socioeconomic data to rank all census tracts in California with a CalEnviroScreen score designating disadvantaged communities as the highest 25% scoring census tracts. CalEnviroScreen scores for the Lathrop Planning Area are shown on Figure 6.1-1. As shown on this figure, Lathrop is a designated Disadvantaged Community.

### REGULATORY SETTING

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#### **Senate Bill 1000**

Senate Bill 1000 (SB 1000), also known as The Planning for Healthy Communities Act, is a comprehensive state legislation that requires California cities to include an Environmental Justice element or a set of environmental justice policies into their General Plans when updating two or more elements concurrently on or after January 1, 2018.

The Bill was established as a state regulation on September 24, 2016, with the goal of improving the health of California cities and addressing pertinent issues of environmental justice related to community wellness. SB 1000 outlines strategies to promote the protection of sensitive land uses within the state, and simultaneously mandates that cities address the needs of disadvantaged communities. Through this bill, environmental justice is a mandated consideration in all city's local land-use planning. SB 1000 was authored by Senator Connie Leyva, and co-sponsored by the California Environmental Justice Alliance (CEJA), and the Center for Community Action and Environmental Justice (CCA EJ).

To aid city governments in meeting the requirements of SB 1000, the California Environmental Justice Alliance (CEJA) has created a strategic toolkit. The SB 1000 Implementation Toolkit serves as a guide for key stakeholders by clarifying legislation requirements and providing tools, best practices, and resources to support these stakeholders as they begin to incorporate the law into local practice. To effectively meet the mandates of the bill, cities must formally identify disadvantaged communities (DACs) and work to reduce health risks specific to these communities by outlining methods and programs within their plan that address the needs of DACs. Each General Plan must address the following topics in order to meet the requirements of SB 1000:

- Pollution Exposure and Air Quality
- Public Facilities
- Food Access
- Safe and Sanitary Homes
- Physical Activity
- "Civil" or Community Engagement
- Improvements and Programs (that address the needs of Disadvantaged Communities)

#### **Senate Bill 535**

In 2012, the Legislature passed SB 535, directing that 25 percent of the proceeds from the Greenhouse Gas Reduction Fund (established by the California Global Warming Solutions Act of 2006 AB 52's cap and trade program) go to projects that provide a benefit to disadvantaged communities.

**Assembly Bill 1550**

In 2016, the Legislature passed AB 1550, which amended SB 535 to require all GGRF investments that benefit DACs to also be located within those communities. The law also requires that an additional 10% of the fund be dedicated to low-income households and communities, of which 5% is reserved for low-income households and communities living within a half-mile of a designated DAC.

**Senate Bill 673**

In 2015, the Legislature passed SB 673 directing the Department of Toxic Substances Control (DTSC) to include criteria such as cumulative impact and neighborhood vulnerability when issuing or renewing facility permits. The law provides the DTSC with an opportunity to use tools such as CalEnviroScreen when making decisions on hazardous waste permitting.

**Assembly Bill 523**

Approved in 2017, AB 523, allocates at least 25% of the Electric Program Investment Charge (EPIC) funds administered by the California Energy Commission (CEC) to support technology demonstration and deployment projects located in and benefiting “disadvantaged communities,” and dedicates at least 10% of the fund to activities located in and benefiting “low-income” communities as defined by AB 1550.

**Senate Bill 43**

Approved in 2013, SB 43, establishes the Green Tariff Shared Renewables program, administered by the California Public Utilities Commission (CPUC), which enables utility customers to meet their energy generation needs through offsite generation of renewable energy projects. The program requires 100 MW of renewable energy projects to be sited in the top 20% of CalEnviroScreen CES scores based on each investor-owned utility (IOU) service territory.

**Assembly Bill 693**

Approved in 2015, AB 693 allocates \$100 million per year for 10 years to fund solar installations on multifamily affordable housing. To qualify, a multifamily affordable housing property must be: (1) located in a DAC as defined by SB 535 using the most recent version of CalEnviroScreen CES; or (2) have at least 80% of tenants with incomes at or below 60% of area median income (AMI).

**Assembly Bill 2722**

Approved in 2016, AB 2722 requires the California Strategic Growth Council to award competitive grants to specified eligible entities for the development and implementation of neighborhood-level transformative climate community plans that include greenhouse gas emissions reduction projects that provide local economic, environmental, and health benefits to disadvantaged communities, as defined. AB 2722 created the Transformative Climate Communities (TCC) program administered through the California Strategic Growth Council (SGC). The TCC is a GGRF-funded program that supports innovative, comprehensive, and community-led plans that reduce pollution and achieve multiple co-benefits at the neighborhood level.

**Senate Bill 244**

Approved in 2011, SB 244 requires cities and counties to address the infrastructure needs of unincorporated disadvantaged communities in city and county general plans and LAFCo Municipal Service Reviews (MSRs) and annexation decisions. SB 244 defines an unincorporated disadvantaged community as a place that: contains 10 or more dwelling units in close proximity to one another; is either within a city SOI, is an island within a city boundary, or is geographically isolated and has existed for more than 50

## 6.0 ENVIRONMENTAL JUSTICE

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years; and has a median household income that is 80 percent or less than the statewide median household income. For cities and counties, SB 244 requires that before the due date for adoption of the next housing element after January 1, 2012, the general plan land use element must be updated to: identify unincorporated disadvantaged communities; analyze for each identified community the water, wastewater, stormwater drainage, and structural fire protection needs; and identify financial funding alternatives for the extension of services to identified communities. For LAFCOs, SB 244 generally prohibits approval of city annexations greater than 10 acres that are contiguous to a disadvantaged unincorporated community unless the city applies to annex the disadvantaged unincorporated community as well.

### **California Department of Transportation's Active Transportation Program (ATP)**

California Department of Transportation (CalTrans) the Active Transportation Program (ATP) aims to enhance public health and advance California's climate goals by increasing safety and mobility for non-motorized active transportation such as biking and walking. Twenty-five percent of program funds are set aside for ATP projects in "disadvantaged communities" (defined as census tracts within the top 25% of CalEnviroScreen (CES) scores along with several other options), while an additional 2% is set aside to fund active transportation planning in DACs.

### **City of Lathrop**

A variety of policies contained in the existing Lathrop General Plan support disadvantaged communities and environmental justice issues through city-wide improvements that provide equitable access to facilities and services, transportation network improvements, parks and recreation opportunities, and promoting air and water quality throughout the Planning Area.

Specific goals and policies included within the Lathrop General Plan that are most related to the topics of environmental justice and disadvantaged communities include:

#### **GOAL NO. 2 - EQUAL OPPORTUNITY**

The creation of growth centers west of Interstate 5 and the rehabilitation of the existing community east of I-5 offers unique opportunities to assure equality in opportunity for existing residents, for racial and ethnic minorities and for people of low and moderate income in the provision and availability of public services and facilities and in meeting employment and housing needs. Insofar as reasonably may be possible, policies and proposals of the General Plan are intended to provide for and support the attainment of such equality of opportunity.

Policies:

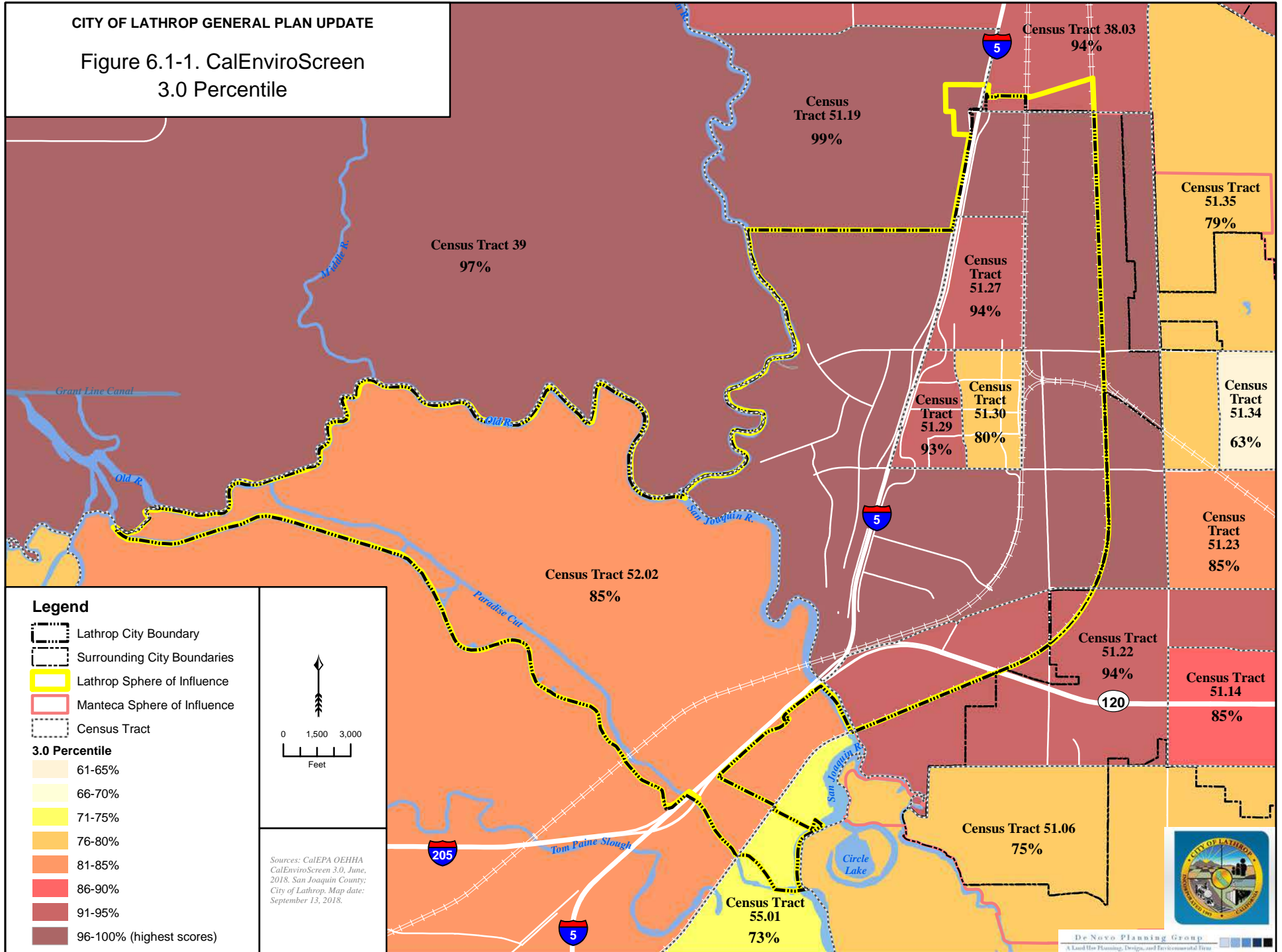
1. The City intends that positive benefits accrue to the community as a whole through programs which maximize the potential of local residents to obtain jobs, assuming adequate training and personal characteristics. Contracts will be sought with employers of commercial and industrial establishments which will assure the opportunity for employing qualified local residents.

#### **GOAL NO. 5 - ENHANCING THE QUALITY OF LIFE**

It is a goal of the General Plan to enhance the quality of living by preventing the degradation of the natural environment, and by taking steps to off-set and alleviate the effects of that degradation which already has occurred or which cannot be avoided. Where feasible, natural conditions should be emulated as features of the community's systems of public and private open space.



Figure 6.1-1. CalEnviroScreen  
3.0 Percentile



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## 6.2 ENVIRONMENTAL JUSTICE DETERMINANTS IN LATHROP

The CalEnviroScreen 3.0 tool is the standard metric for determining the location and presence of designated disadvantaged communities within an area. As shown on Figure 6.1-1, based on a screening of existing census tracts within the City of Lathrop, all census tracts defined by City boundaries are considered CalEnviroScreen-designated Disadvantaged Communities (DACs). As described previously, there are seven primary environmental justice focus areas defined within *The Planning for Healthy Communities Act* that must be used in addressing the unique or compounded health risks in disadvantaged communities (Pollution Exposure and Air Quality, Public Facilities, Food Access, Safe and Sanitary Homes, Physical Activity, Community Engagement, and Improvements and Programs). The existing conditions for these focus areas within the City of Lathrop are assessed below.

### POLLUTION EXPOSURE AND AIR QUALITY

Air quality and pollution exposure is an aspect of environmental quality that may disproportionately impact disadvantaged communities (DACs). This is often due to the existence and maintenance of pollution-emitting sources within close proximity to DACs. If disadvantaged communities have unequal or excessive exposure to sources of pollution including; air pollution, water contamination, and hazardous waste exposure, this exposure must be addressed using appropriate planning measures. Disproportionate exposure to pollutants is linked to negative health impacts including asthma, cardiovascular illness, and other fatal conditions.

Air quality is a mandated environmental justice focus area under SB 1000. As mentioned previously, all census tracts within the boundaries of the City of Lathrop are defined as CalEnviroScreen-designated Disadvantaged Communities (DACs). This section serves to assess pollution exposure and air quality in the City of Lathrop as a response to the presence of DACs. A detailed assessment of existing air quality and air quality regulations as well as water quality and water quality regulations within the City of Lathrop, are addressed in Section 5.0 (Conservation) and Section 3.0 (Community Services & Facilities).

#### Air Quality

As described in Section 5.0 of this document, pollution potential in the San Joaquin County area is relatively high due to the combination of air pollutant emissions sources, transport of pollutants into the area and meteorological conditions that are conducive to high levels of air pollution. Elevated levels of particulate matter (primarily very small particulates or PM<sub>10</sub>) and ground-level ozone are of most concern to regional air quality officials.

Table 6.2-1 depicts the State and national attainment status for San Joaquin County. As evident in the table, San Joaquin County has a State designation of Nonattainment for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> and is either Unclassified or Attainment for all other criteria pollutants. In accordance with the California Clean Air Act (CCAA), areas of the state are designated as attainment, nonattainment, or unclassified with respect to applicable standards dependent upon the status of pollutant concentrations. "Attainment" refers to instances where pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. A detailed analysis of criteria pollutants within San Joaquin County is available in Section 5.0 (Conservation).

## 6.0 ENVIRONMENTAL JUSTICE

**TABLE 6.2-1: STATE AND NATIONAL ATTAINMENT STATUS**

CRITERIA POLLUTANTS	STATE DESIGNATIONS	NATIONAL DESIGNATIONS
Ozone	Nonattainment	Nonattainment
PM <sub>10</sub>	Nonattainment	Attainment
PM <sub>2.5</sub>	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	
Lead	Attainment	
Hydrogen Sulfide	Unclassified	
Visibility Reducing Particles	Unclassified	

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AREA DESIGNATIONS MAPS / STATE AND NATIONAL), 2017B.

### Asthma Rates

Table 6.2-2 includes data from California Health Interview Survey (CHIS) administered by the UCLA Center for Health Policy Research for asthma rates, symptoms and hospitalizations for San Joaquin County, and the State.

**TABLE 6.2-2: ASTHMA RATES AND HOSPITALIZATIONS (2016)**

REGION	EVER DIAGNOSED WITH ASTHMA	EMERGENCY OR URGENT CARE IN PAST 12 MONTHS FOR ASTHMA (CURRENT ASTHMATICS)	HAD ASTHMA EPISODE / ATTACK IN PAST 12 MONTHS (CURRENT ASTHMATICS)	HAD ASTHMA SYMPTOMS WITHIN PAST 12 MONTHS (CURRENT ASTHMATICS)
San Joaquin County	14.5%	9.1%*	19.9%	99.5%
California	14.8%	13.1%	28.7%	90.3%

SOURCE: CALIFORNIA HEALTH INTERVIEW SURVEY. CHIS 2016 ASTHMA SOURCE FILE. LOS ANGELES, CA: UCLA CENTER FOR HEALTH POLICY RESEARCH.

\* INDICATES POSSIBLE STATISTICALLY UNSTABLE VALUES DUE TO SAMPLE SIZE.

As shown in Table 6.2-2 above, 14.5 percent of San Joaquin County residents have been diagnosed with asthma at some point in their lives, and of those who have been diagnosed, nearly all have had asthma symptoms in the past 12 months (from the time the 2016 CHIS survey was conducted), however County Hospitalizations due to asthma are slightly lower than statewide averages at 9.1 percent and 13.1 percent respectively.<sup>1</sup> The percentage of people diagnosed with asthma in San Joaquin County is roughly equal the statewide average.

### Water Quality

According to the California Water Quality Control Monitoring Council, there are areas designated as Section 303(d) impaired waterbodies within San Joaquin County and the Planning Area. Areas in the city and in the regional vicinity of the Planning Area that are impaired are referred as Delta Waterways (Southern Portion) by the Water Quality Control Monitoring Council. This includes 3,125 acres listed as early as 1996 for Chlorpyrifos (Agriculture, Urban Runoff/Storm Sewers), DDT (Agriculture), Diazinon (Agriculture, Urban Runoff/Storm Sewers), Electrical Conductivity (Agriculture), Group A Pesticides (Agriculture), Invasive Species (Source Unknown), Mercury (Resource Extraction), and Unknown Toxicity

<sup>1</sup> Possible statistically unstable values due to sample size.

(Source Unknown). To maintain water quality, the City of Lathrop provides a system of storm drains, detention basins, and pumping facilities and provides monitoring for this storm drain system. The City enforces all storm drain regulations established by the US EPA and the State of California. To further address storm water quality- the City of Lathrop, in collaboration with the rest of San Joaquin County, prepared a Multi-Agency Post-construction Stormwater Standards Manual to provide consistent guidance for municipal workers, developers and builders in implementing the requirements under the Statewide Small MS4 NPDES permit (2013-0001-DWQ).

In regard to water treatment and wastewater; the City of Lathrop has an approved Sewer System Management Plan (SSMP) (March 2018) in place that was prepared in compliance with the State Water Resource Board (SWRCB) General Order No. 2006-0003-DWQ. Additionally, Wastewater from the City of Lathrop is currently treated at the Manteca Water Quality Control Facility (MWQCF) and the Lathrop Consolidated Treatment Facility (LCTF). Section 5.0, (Conservation), and Section 3.0 (Community Services and Facilities) includes additional information related to water quality, and water quality facilities.

### **Drinking Water Quality Reporting**

Based on the City's 2017 Drinking Water Consumer Confidence Report, which details the water quality tests conducted on the City's water system, Lathrop is currently meeting or exceeding all of the drinking water standards set Environmental Protection Agency. While the city's drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. Arsenic, is naturally occurring, but is also found in the byproduct of the manufacturing of glass and electronics as well as agricultural runoff from, was measured at 7.7 parts per billion in 2017, which is below the MCL of 10. Lathrop utilizes a state-of-the-art arsenic removal system that binds media to the arsenic particles in water that is known to be high, and then removed to bolster the safety of the water consumed by residents.

### **Water Supply**

The City is located within the San Joaquin River Hydrological Region, the Planning Area is located in the Upper Old River, Oakwood Lake-San Joaquin River, and Town of French Camp-San Joaquin River watersheds. In regard to groundwater, the city is located in the Eastern San Joaquin River Groundwater Basin. The Eastern San Joaquin Groundwater Basin Groundwater Management Plan (ESJGB-GMP) (NSJCGB, 2004) was prepared in September 2004 "to review, enhance, assess, and coordinate existing groundwater management policies and programs...and to develop new policies and programs to ensure the long-term sustainability of groundwater resources in Eastern San Joaquin County." A detailed discussion of the Eastern San Joaquin River Groundwater Basin is available in Section 5.0 (Conservation).

The City provides water services directly to its residents. In an average year, about 1.5 million acre-feet of water is diverted from the San Joaquin River at Friant Dam. The rest of the area's water supply needs are met by importing water from northern California (via the Central Valley Project) and by pumping water from the groundwater basin (SJRG 2013). The City has an adopted Urban Water Management Plan (UWMP) and Integrated Water Resources Master Plan (IWRMP) to ensure water supply capacity and infrastructure is adequate for existing and projected needs. Considering existing water supply sources, all planned system improvements, planned construction, future unaccounted-for conservation measures, and other projected availability considerations, the City is expected to have adequate supplies through 2040 during normal water years (West Yost Associates, 2018). For detailed information on the City's surface water supply, groundwater supply, and distribution system please see Section 5.0 (Conservation) and Section 3.0 (Community Services & Facilities).

## 6.0 ENVIRONMENTAL JUSTICE

**TABLE 6.2-3: PAST AND FUTURE WATER SUPPLY CAPACITY AND DEMAND DURING NORMAL YEARS, AFY**

ANNUAL WATER DEMAND	ACTUAL						PROJECTED					
	2011	2012	2013	2014	2015	2016	2020	2025	2030	2035	2040	BUILDOUT
Potable Water Demand	3,798	4,332	4,686	4,008	3,445	3,646	7,350	9,711	11,965	13,531	15,185	18,616
Recycled Non-Potable Demand	485	437	465	519	546	609	1,495	2,439	3,398	4,112	4,815	6,284
Total Demand	4,283	4,769	5,151	4,527	3,991	4,255	8,845	12,150	15,363	17,643	20,000	24,900
Available Surface Water Capacity	8,007	8,007	8,007	6,887	6,887	6,887	6,887	6,887	6,887	6,887	10,671	10,671
Groundwater Pumping Capacity	5,850	5,850	5,850	5,850	5,850	5,850	6,253	7,060	7,060	7,060	7,060	7,060
Total Potable Capacity	13,857	13,857	13,857	12,737	12,737	12,737	13,140	13,947	13,947	13,947	17,731	17,731
Recycled Non-Potable Supply	485	437	465	519	546	609	1,495	2,439	3,398	4,112	4,815	6,284
Total Water Supply	14,342	14,294	14,322	13,256	13,283	13,346	14,635	16,386	17,345	18,059	22,546	24,015
Surplus or Deficit	10,059	9,525	9,171	8,729	9,292	9,091	5,790	4,236	1,982	416	2,546	(885)

SOURCE: WEST YOST ASSOCIATES, 2018. NOTES:

1. POTABLE WATER DEMANDS FROM 2011-2016 FROM WSMP, 2018, TABLE 4-1.
2. POTABLE WATER DEMANDS FROM 2020-BUILDOUT FROM WSMP, 2018, TABLE 5-11.
3. RECYCLED WATER DEMAND ASSUMES ALL WASTEWATER GENERATED WILL CONTINUE TO BE USED.
4. AVAILABLE SURFACE WATER CAPACITY FROM WSMP, 2018, TABLE 5-4.
5. THE CITY'S TOTAL PHASE I ALLOTMENT OF SCWSP WATER, FOLLOWING THE 2013 SALE TO THE CITY OF TRACY OF 1,120 AFY, IS 6,887 AFY.
6. GROUNDWATER CAPACITY FROM 2011-2016 IS BASED ON ANNUAL YIELD OF WELLS 6-10 NOT LIMITED BY LAWTF CAPACITY (WSMP, TABLE 5-3).
7. GROUNDWATER CAPACITY FROM 2020-2040 IS FROM WSMP, 2018, TABLE 5-7.
8. RECYCLED NON-POTABLE PRODUCTION FROM 2011-2015 IS BASED ON THE HISTORICAL LCTF AVERAGE ANNUAL FLOW (DRAFT 2018 WWMP), TABLE 4-1.
9. RECYCLED NON-POTABLE PRODUCTION FROM 2016-BUILDOUT IS BASED ON RWMP, 2018, TABLE 4-1, CONVERTED TO AFY AND ASSUMES FUTURE TREATMENT CAPACITY AT LCTF

## PUBLIC FACILITIES

Access and availability of public facilities is an aspect of the built-environment that may disproportionately limit the opportunities of disadvantaged communities (DACs). If disadvantaged communities have unequal access to public facilities, or if a City does not provide adequate facilities for public use, DACs may be limited in their ability to access necessary key resources. Adequate planning of parks, and transportation infrastructure can ensure that all communities within a City have equal access to resources. Limited access to resources as a result of inadequate public facilities can lead to reduced lifespan, poorer health outcomes, and diminished mental well-being.

Public Facilities is a mandated environmental justice focus area under SB 1000. As mentioned, all census tracts within the boundaries of the City of Lathrop are defined as CalEnviroScreen-designated Disadvantaged Communities (DACs). This section serves to assess the adequacy of public facilities in the City of Lathrop given the presence of DACs throughout the city.

### Parks and Cultural Centers

Equitable access to public parks, schools and cultural centers within a community is critical to the promotion of public health and well-being. Lack of recreational and open spaces is a significant driver of poor physical and mental health. Parks and public facilities provide opportunities for exercise, recreation, and community engagement that is necessary to bolster resident health. Parkland within the city is detailed and displayed in Section 3.0 Community Services and Facilities (Table 3.3-1 and Figure 3.3-1).

Because the entire City of Lathrop is designated as a disadvantaged community under the SB 1000 guidelines, the current distribution of park acreage per 1,000 residents for the entire City of Lathrop is an appropriate indicator of adequate park space and access. The California Statewide Park Program (Public Resources Code §5642) defines underserved communities as having a ratio of less than three acres of parkland per 1,000 residents.<sup>2</sup> This measure identifies areas where surrounding population density may overwhelm limited park space. As described in Section 3.0 (Community Services and Facilities) the city has approximately 82.5 acres of parkland. Therefore, with a 2017 population of approximately 23,110 the current distribution of park acreage per 1,000 residents is 3.57, which is above the Statewide Park Program standard.

An additional factor that determines the equitability and accessibility of parks and public facilities within an area is the distance between these public facilities and the home. If this distance to public facilities is perceived as “walkable”, residents may be more likely and willing to walk to those amenities. A distance of 1/4 mile is a commonly cited threshold for how far most people are willing to walk for neighborhood services. Conversely, a national survey of bicyclist and pedestrian attitudes and behavior, by the National Highway Traffic and Safety Administration and the Bureau of Transportation Statistics, surveyed almost 10,000 people over the age of 16 and found that only 5 percent of walking trips were for getting to work. Of the other trips, 38 percent were for personal errands, 28 percent were for exercise, and 21 percent were for recreation or leisure and the average trip length was 1.3 miles. The validity of both the quarter-mile, and or longer distances, may be dependent on perceptions of the built environment, safety, and time constraints, distance, as well as connectivity. As shown of Figure 6.2-1, the majority of developed residential areas fall within the half-mile radius, and most are also within a quarter-mile of public parks.

<sup>2</sup> California Department of Parks and Recreation. SCORP 2015. Available at: [http://www.parksforcalifornia.org/data/Calif\\_SCORP2015\\_ScreenRes.pdf](http://www.parksforcalifornia.org/data/Calif_SCORP2015_ScreenRes.pdf)

**Public Transit**

Public transit within a city increases accessibility to resources for disadvantaged communities and ensures that those without automobile access or without the ability to operate an automobile can maintain mobility. In this way, public transit provides a way of promoting equity within the built-environment.

Within the City of Lathrop, the San Joaquin Regional Transit District is the primary provider of bus transit. The San Joaquin Regional Transit District provides connections from Lathrop to Stockton, Tracy, and Livermore. Additionally, the San Joaquin Regional Transit provides paratransit, also known as dial-a-ride or door-to-door service, for people who are unable to independently use the transit system due to a physical or mental disability. Individuals must be registered and certified as ADA eligible before using the service. Paratransit operators are required by the ADA to service areas within three-quarters of a mile of their respective, public fixed-route service.

The City provides discounted bus fare for the San Joaquin Regional Transit District is available for seniors (age 65 & over), Medicare card holders, and Discount Fare Card holders.<sup>3</sup> Standard priced bus fare within the City of Lathrop is shown in Table 6.2-4 below.

**TABLE 6.2-4: SAN JOAQUIN REGIONAL TRANSIT DISTRICT BUS FARE**

<i>FARE</i>	<i>COST</i>
1 Ride Cash at Farebox	\$1.50
1 Ride Pass	\$1.50
1 Day Pass	\$4.00
31 Day Pass	\$65.00

*SOURCE SAN JOAQUIN REGIONAL TRANSIT DISTRICT (2018)*

The Altamont Corridor Express (ACE) rail service connects Lathrop to San Jose and the Bay Area and also connects Stockton to Lathrop. During weekdays, four westbound trains serve Lathrop between 4:39 AM and 7:24 AM and four eastbound trains serve Lathrop between 5:23 PM and 8:26 PM. The Lathrop/Manteca station is located on Shideler Parkway at Yosemite Avenue (just east of McKinley Avenue). ACE trains allow bicycles on designated passenger train cars.

The affordability and competency of the public transit network within a city is critical for ensuring equitable resource access. Expanding the network of bus routes and maintaining discounted fare rates for disadvantaged communities will promote equitable mobility within the City of Lathrop. Additional information on public transportation and circulation within the City of Lathrop is available in Section 2.0 (Circulation).

**Bike Lanes**

Bike access is a facet of transportation that offers a mobility option for those residents who do not have access to a car and/or those who prefer active transportation. Increased accessibility of bike lanes may help reduce congestion, contribute to community physical health, and improve air quality. Communities that do not have available bike lanes may be disadvantaged by limited resource access and diminished opportunity for physical exercise. Maintaining facilities that allow for bicycle mobility is important for community vitality. This is especially true in disadvantaged communities where transportation via car may be less accessible.

The City of Lathrop’s existing Bicycle Transportation Plan depicts an extensive network of Class I and Class II bike lanes that are proposed for the City. Some of these bikeways have already been built (See list of

<sup>3</sup> The San Joaquin Regional Transit District (2018). Transit Fares. Available at: <http://sanjoaquinrtd.com/fares/>



bike lanes below), while others do not currently exist. This outline for proposed bike paths within the City offers a bicycle circulation network that provides access to bike paths for the entire City of Lathrop.<sup>4</sup>

Class 1 bike lanes are paved pathways that are completely separated from streets. There are not many Class 1 bike lanes within the City of Lathrop. Class 2 bike lanes are a striped lane for one-way bike travel on a street. Bicycle facilities in Lathrop include the following:

- Class I multi-use bike path exists on:
  - Some sections of Golden Valley Parkway, Spartan Way, River Islands Parkway, Lakeside Drive, and Somerston Parkway
  - North side of Lathrop Road between Harlan Road and 5<sup>th</sup> Street
- Class II bike lanes exists on:
  - Eastbound Thomsen Road from Derby Lane to just west of Halmar Lane
  - 5<sup>th</sup> Street from Lathrop Road to H Street and from J Street to Louise Avenue
  - Lathrop Road from 5<sup>th</sup> Street to eastern city limit
  - Somerston Parkway south of River Islands Parkway
  - River Islands Parkway west of Somerston Parkway
  - Lakeside Drive west of Somerston Parkway

Lakeside Drive east of Somerston Parkway is currently signed for bike lanes, however, bike lanes are not striped.

In general, most Lathrop schools, parks, and public buildings are equipped with bike racks for short-term bicycle parking. The City has a limited amount of bike lanes and bike infrastructure currently in existence for residents to travel. Increasing bike infrastructure and meeting the goals of the existing Bicycle Transportation Plan to increase accessibility to grocery stores and necessary resources for disadvantaged residents will be one of the objectives of the General Plan Update. More information on bicycle and transportation-related facilities is available in Section 2.0 (Circulation).

## FOOD ACCESS

Ensuring adequate food access is challenging in many communities in California. Some communities within California cities have limited access to adequate and/or healthy food. Often, low-income areas may lack healthy food options or adequate supermarkets. An inability to access nutritious foods can lead to poor health outcomes in disadvantaged communities. Food-insecurity, or the uncertainty of having adequate food, is especially harmful for children and pregnant women who are most in need of nutrient-rich foods. Communities that are most often impacted by food insecurity include low income communities and communities of color.<sup>5</sup>

Food Access is a mandated environmental justice focus area under SB 1000. As mentioned, all census tracts within the boundaries of the City of Lathrop are defined as CalEnviroScreen-designated Disadvantaged Communities (DACs). This section serves to assess the existing conditions of food accessibility in the City of Lathrop given the presence of DACs across the City.

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<sup>4</sup> Department of Parks and Recreation (1995). City of Lathrop Bicycle Transportation Plan. Available at: [http://www.ci.lathrop.ca.us/lathrop/cdd/documents/pdf/17-06-2013\\_10-00-49-744\\_744.pdf](http://www.ci.lathrop.ca.us/lathrop/cdd/documents/pdf/17-06-2013_10-00-49-744_744.pdf)

<sup>5</sup>Elsheikh, E.; Barhoum, N. (2013). Structural Racialization and Food Insecurity in the United States. Prepared for the U.N. Human Rights Committee on the International Covenant on Civil and Political Rights.

### **Food Insecurity**

Food insecurity is the uncertainty about the availability or adequacy of nutritional and safe foods. Based on the USDA available food security data and data from the 2016 American Community Survey, Feeding America estimates the number of food insecure people within a given county. These estimates are located in the Feed America Map the Meal Gap Report. Feeding America estimated that the number of food insecure individuals in San Joaquin County was 95,290, with a food insecurity rate of 13.3% for the year 2016. The state estimate for these same measures was 11.7%. Therefore, the rate of food insecurity within San Joaquin County is higher than the rate of food insecurity within California as a whole.

Of the food insecure population within San Joaquin County, 91% were from households which were below the Federal poverty threshold used for nutrition assistance programs and are therefore eligible for food assistance from the federal government<sup>6</sup>. These residents who qualify for federal nutrition assistance programs can utilize assistance at any store that accepts WIC and SNAP purchases. At the county level, the UCLA Center for Health Policy Research and the California Health Interview Survey (CHIS) reported that 11.3% of adults in are food insecure due to low income. In comparison, the same measure for the state of California is 8.1%<sup>7</sup>. Based on the data from both the CHIS and Feeding America, it is evident that the county food insecurity rate is slightly above the average for counties in California.

### **Food Access**

The Healthy Food Financing Initiative (HFFI) Working Group considers a food desert as a low-income census tract where a substantial number or share of residents has low access to a supermarket or large grocery store. Additionally, the USDA developed a Food Access Research Atlas that identifies “Food deserts” in the United States at the census tract level. The 2008 U.S. Department of Agriculture (USDA) Farm Bill defined a food desert as an “area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower income neighborhoods and communities.”

The California Department of Public Health Nutrition Network GIS Map Viewer, and the USDA Food Access Research Atlas both designate portions of Planning Area as a Food Desert. As shown on Figure 6.2-2, a food desert is associated within a small portion of the Planning Area located within U.S. Census Tract 38.03, which is located in the northernmost portion of the Planning Area north of Roth Road.

In addition to the proximity of grocery and food sources within an area, the types of food sources available are important for determining adequacy of food access. The USDA Food Research Atlas data shows that there were approximately 158 grocery stores in San Joaquin County as of 2014, and approximately 529 of these stores were SNAP authorized. In addition, the same data set shows that the County had 442 fast food restaurants as of 2014.<sup>8</sup>

## **SAFE AND SANITARY HOMES**

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The condition of the housing stock in a disadvantaged community may have negative impacts on the well-being of community residents. These health impacts stem from issues such as poor indoor air quality, toxic building materials, exposure to climate variation such as excess heat or cold, improper ventilation, and

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<sup>6</sup> Gundersen, C., et al. (2017). Map the Meal Gap 2016: Food insecurity and child food insecurity estimates at the county level. Feeding America. Accessible at: [http://www.feedingamerica.org/research/map-the-meal-gap/2016/overall/CA\\_AllCounties\\_CDs\\_MMG\\_2016.pdf](http://www.feedingamerica.org/research/map-the-meal-gap/2016/overall/CA_AllCounties_CDs_MMG_2016.pdf)

<sup>7</sup> California Health Interview Survey. CHIS 2016 Diet Source File. Los Angeles, CA: UCLA Center for Health Policy Research. Available at: [www.chis.ucla.edu/](http://www.chis.ucla.edu/) Accessed September 4, 2019.

<sup>8</sup> <https://www.ers.usda.gov/data/fooddesert>

structural insecurity. Unsafe housing conditions can be a result of the age of the dwelling structure, which increases the likelihood of incorporation of dangerous materials like lead and asbestos, that have significant negative health impacts.<sup>9</sup> Disadvantaged communities often have a larger amount of older units within their housing stock and therefore, residents of these communities are more likely to be exposed to the harmful health impacts that are associated with older housing. Other factors that can contribute to unsafe housing conditions include; improper regulation and overcrowding. Ensuring the safety and sanitation of housing stock within a community ensures that there are proper living conditions for all residents, including DACs.

Safe and Sanitary Homes is a mandated environmental justice focus area under SB 1000. As mentioned, all census tracts within the boundaries of the City of Lathrop are defined as CalEnviroScreen-designated Disadvantaged Communities (DACs). This section serves to assess the existing conditions of home safety and home sanitation in the City of Lathrop given the presence of DACs across the City.

### **Age of Housing Stock**

The age of a housing unit is a primary factor in the building conditions of the dwelling unit, therefore the age of a community's housing stock is a good indicator of the condition of the housing stock. Data from the 2009-2013 ACS indicates that 88.1 percent of units within the City of Lathrop have been built in 1970 or later.<sup>11</sup> Figure 1.1-4. Located in Section 1.0 (Land Use and Socioeconomics) shows Development Trends by year built based on County Assessor data. According to the CDC, a substantial amount of existing United States housing regulation and bans related to the use of toxic materials were developed in the 1970s; including regulations on the use of lead paint and asbestos.<sup>10</sup> Additionally, older housing units are more likely to have structural and material damage. Therefore, the relatively young age of Lathrop's housing stock indicates that overall housing conditions are generally good.

### **Housing Conditions**

To assess existing housing conditions within Lathrop, the City performed a citywide "windshield survey" in 2008. The survey assessed housing conditions that were visible via exterior observation. The exterior survey focused on five structural categories: foundation, roofing, siding, windows, and electrical; and two supplemental categories: frontage improvements and additional factors<sup>11</sup>. Using this assessment, a housing block was rated as being in sound or dilapidated condition, or in need of minor, moderate, or substantial repairs

In 2015, the City updated their housing element and included an updated review of housing conditions that focused on the condition of the roof, siding, windows, and doors. The updated survey narrowed the focus in on older neighborhoods east of Interstate-5 that were more likely to be in need of repair. The information collected during both the 2008 and 2015 survey is summarized in Table 6.2-5, Lathrop Housing Stock Conditions 2008 and 2015.

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<sup>9</sup> SB 1000 Toolkit

<sup>10</sup> Centers for Disease Control and Prevention, National Center for Environmental Health, 2018. Retrieved from: <https://www.cdc.gov/nceh>

<sup>11</sup> City of Lathrop Community Development. (September, 2016). 2015 Housing Element. Available at: [http://www.ci.lathrop.ca.us/lathrop/cdd/projects/Pdf/housingelement\\_files/26-01-2017\\_16-03-50-506.pdf](http://www.ci.lathrop.ca.us/lathrop/cdd/projects/Pdf/housingelement_files/26-01-2017_16-03-50-506.pdf)

## 6.0 ENVIRONMENTAL JUSTICE

**TABLE 6.2-5: LATHROP HOUSING STOCK CONDITIONS 2008 AND 2015**

Mobile	2008		2015							
	All Housing		Single Family		Multi Family		Mobile Homes		TOTAL	
Condition	Number	Projected Age	Number Surveyed	Percent	Number	Percent	Number	Percent	Number	Percent
Good/Fair	35	15-20	327	93%	22	42%	43	96%	392	87%
Needs Major Improvement	15	20-30	22	6%	11	21%	2	4%	35	8%
Needs Substantial Improvements	5	30-50	2	<1%	20	38%	0	0%	22	5%
<b>Total</b>	<b>55</b>	<b>na</b>	<b>352</b>	<b>100%</b>	<b>53</b>	<b>100%</b>	<b>45</b>	<b>100%</b>	<b>449</b>	<b>100%</b>

SOURCE: CITY OF LATHROP HOUSING ELEMENT, 2015; CITY OF LATHROP HOUSING SURVEY, 2008 & DE NOVO SURVEY, 2015

Based on data from the 2015 housing survey depicted in Table 6.2-5, the majority of the City's housing stock surveyed (392 units surveyed,) 87% were determined to be in good, or fair condition, and any repairs needed are primarily aesthetic improvements.

### Overcrowding

Overcrowding within a housing unit is a primary cause of unsafe housing conditions. The World Health Organization notes that overcrowding is a potential health risk as it contributes to the transmission of disease by creating unsanitary conditions.<sup>12</sup> A housing unit is considered overcrowded if there is more than one person per room and severely overcrowded if there are more than 1.5 persons per room. Table 6.2-6 taken from the City's Housing Element depicts overcrowding data for Lathrop. Original data from the U.S. Census 2013 American Community Survey.

**TABLE 6.2-6: OVERCROWDING BY TENURE (2013)**

PERSONS PER ROOM	OWNER		RENTER		TOTAL	
	Number	Percent	Number	Percent	Number	Percent
1.00 or less	3,094	94.8%	1,049	90.0%	4,143	93.5%
1.01 to 1.50	144	4.4%	52	4.5%	196	4.4%
1.51 or more	27	0.8%	65	5.6%	92	2.1%
TOTAL	3,265	100%	1,166	100%	4,431	100%
<b>Overcrowded</b>	<b>171</b>	<b>5.2%</b>	<b>117</b>	<b>10.0%</b>	<b>288</b>	<b>6.5%</b>

SOURCE: CITY OF LATHROP HOUSING ELEMENT 2015; US CENSUS, 2009-2013 ACS

According to the data from the Lathrop Housing Element and U.S. Census ACS 2013, 94.8 percent of owner occupied housing units were not considered overcrowded (had one or fewer persons per room) and 90 percent of rental units were not overcrowded. Rental units had a higher rate of severe overcrowding (2.1 percent) compared to owner units (0.8 percent).<sup>11</sup>

### Policies

The existing City of Lathrop Housing Element was adopted in 2015 and contains policies that are focused on supporting the efforts of the San Joaquin Housing Authority in its administration of Section 8/Housing Choice vouchers, public housing, and farmworker housing. The Housing Element also includes policies to

<sup>12</sup> World Health Organization (WHO). Accessed on September 5, 2018. Water Sanitation and Hygiene. What are the health risks related to overcrowding?. Available at: [http://www.who.int/water\\_sanitation\\_health/emergencies/qa/emergencies\\_qa9/en/](http://www.who.int/water_sanitation_health/emergencies/qa/emergencies_qa9/en/)

promote the construction of housing that is affordable to all income levels and policies to ensure healthy and safe housing, such as addressing the presence of toxic building materials.

## PHYSICAL ACTIVITY

Residents of Disadvantaged Communities (DACs) are often more likely to have negative health outcomes. Increased physical activity levels are associated with a decreased risk for numerous health conditions and chronic illnesses. The built environment in DACs can often be limited by land use planning and lack of investment, leaving less opportunities for formal and informal physical activity. Increasing the opportunity for physical activity within a community can work to positively impact the health of DACs.

Physical activity a mandated environmental justice focus area under SB 1000. As mentioned, all census tracts within the boundaries of the City of Lathrop are defined as CalEnviroScreen-designated DACs. This section serves to assess the existing conditions of physical activity in the City of Lathrop given the presence of DACs across the City.

### Physical Fitness and Health Demographics

Lack of physical activity is a major risk factor for many diseases and causes of death, including heart disease, obesity, mental-health conditions, diabetes, stroke, and Alzheimer's. The San Joaquin County 2016 Community Health Needs Assessment includes data regarding health measures for children and adults in San Joaquin County. As shown in Table 6.2-7 below, for almost all listed indicators (Diabetes prevalence, poor mental health, self-reported health quality, and obesity rates), the County of San Joaquin had higher percentages of residents with physical activity-related health problems than those same measures for the State of California.

**TABLE 6.2-7: HEALTH INDICATORS (SAN JOAQUIN COUNTY AND STATEWIDE)**

INDICATOR	SAN JOAQUIN COUNTY	CALIFORNIA
Diabetes Prevalence (Age-adjusted) <sup>13</sup>	10.40%	8.10%
Adult Heart Disease Prevalence <sup>14</sup>	6.20%	6.30%
Poor Mental Health <sup>15</sup>	18.20%	15.90%
Adults with Self-Reported Poor or Fair Health (Age-adj) <sup>16</sup>	22.00%	18.40%
Adult Obesity Prevalence (BMI > 30) <sup>17</sup>	29.10%	22.30%
Child Obesity Prevalence (Grades 5, 7, 9) (BMI>30) <sup>18</sup>	21.00%	19.00%

SOURCE: ADAPTED FROM THE SAN JOAQUIN COUNTY 2016 COMMUNITY HEALTH NEEDS ASSESSMENT<sup>19</sup>

In addition, the California Health Interview Survey includes data regarding activity levels for children and teens in San Joaquin County. As shown in Table 6.2-8 below, approximately 44 percent of San Joaquin County children ages 5-11 identified being physically active every day of the week for at least one hour, which is roughly 18 percentage points higher than the Statewide average for children. However, 12

<sup>13</sup> Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 2012.

<sup>14</sup> California Health Interview Survey, 2011-12

<sup>15</sup> California Health Interview Survey, 2013-14.

<sup>16</sup> Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Accessed via the Health Indicators Warehouse. US Department of Health & Human Services, Health Indicators Warehouse, 2006-12

<sup>17</sup> Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 2012.

<sup>18</sup> California Department of Education, FITNESSGRAM® Physical Fitness Testing, 2013-14.

<sup>19</sup> San Joaquin County Community Health Assessment Collaborative. 2016 Community Health Needs Assessment. Available At: [www.healthiersanjoaquin.org/pdfs/2016/2016\\_CHNA\\_full\\_document-narrative\\_and\\_health\\_profiles.pdf](http://www.healthiersanjoaquin.org/pdfs/2016/2016_CHNA_full_document-narrative_and_health_profiles.pdf)

## 6.0 ENVIRONMENTAL JUSTICE

percent of children in the County reported zero days per week of more than one hour of physical activity, compared to a Statewide average of 6.2 percent.

This data also indicates that exercise and activity levels may decrease from childhood ages to teen ages. 27.2 percent of teens in the county reported being active for at least one hour, seven days a week, compared to 44 percent of children, however it should be noted that these values may be statistically unstable due to limited sample sized in several topic areas.

**TABLE 6.2-8: NUMBER OF DAYS PER WEEK PHYSICALLY ACTIVE AT LEAST ONE HOUR (2016)**

DAYS PER WEEK	SAN JOAQUIN COUNTY CHILDREN (5-11)	CALIFORNIA CHILDREN (5-11)	SAN JOAQUIN COUNTY TEENS	CALIFORNIA TEENS
0	12.0%*	6.2%	--	9.2%*
1	--	6.4%	56.0%*	8.8%
2	8.6%*	12.7	--	9.7%*
3	2.0%*	17.7%	--	20.3%
4	21.1%*	11.2%	13.8%	11.6%*
5	12.8%*	13.6%	1.9%*	16.8%
6	--	6.5%	--	12.4%*
7	43.6%*	25.7%	27.2%*	11.1%*

SOURCE: CALIFORNIA HEALTH INTERVIEW SURVEY. CHIS 2016 CHILDREN AND TEEN SOURCE FILE. LOS ANGELES, CA: UCLA CENTER FOR HEALTH POLICY RESEARCH. \* INDICATES POSSIBLE STATISTICALLY UNSTABLE VALUES DUE TO SAMPLE SIZE. -- =NONE REPORTING.

### PHYSICAL FITNESS TESTING

Another indicator of physical activity and fitness for children and teens is the California Department of Education's Physical Fitness Testing (PFT) Program, which is administered by local school districts to all fifth, seventh, and ninth graders annually.<sup>20</sup> The test assesses six major fitness areas, including aerobic capacity (cardiovascular endurance), body composition (percentage of body fat), abdominal strength and endurance, trunk strength and flexibility, upper body strength and endurance, and overall flexibility. The PFT Program provides a statewide snapshot of physical fitness. However, its data is collected at the local school district level by people who are not health professionals, and tests for each of the fitness areas are difficult to administer consistently. Consequently, its results are prone to some margin of error over time and from place to place. California Physical Fitness Test PFT Results for the Manteca Unified District, and statewide results for the 2016-17 academic year are shown in Table 6.2-9.

**TABLE 6.2-9: STUDENT PHYSICAL FITNESS TESTING (PFT) RESULTS (2016-2017)**

PHYSICAL AREAS	MANTECA UNIFIED DISTRICT % WITHIN HEALTHY FITNESS ZONE HFZ			STATEWIDE % WITHIN HEALTHY FITNESS ZONE HFZ		
	Gr. 5	Gr. 7	Gr. 9	Gr. 5	Gr. 7	Gr. 9
Aerobic Capacity	48.0	59.1%	56.6%	62.0	64.6	61.9
Body Composition	57.5%	60.9%	59.5%	59.3	61.3	62.8
Abdominal Strength	74.9%	83.2%	83.4	70.9	79.6	82.6
Trunk Extension Strength	84.3%	93.3%	99.0%	84.5	87.3	89.7
Upper Body Strength	67.2%	70.6%	74.9%	63.6	66.6	70.9
Flexibility	80.2%	81.4%	91.4%	71.9	79.8	84.2

SOURCE: CALIFORNIA DEPARTMENT OF EDUCATION, PHYSICAL FITNESS TESTING RESULTS (2016-2017).

<sup>20</sup> California Department of Education. Physical Fitness Testing Results, Accessed on September 5, 2018. Accessible at: <http://www.cde.ca.gov>

As shown in Table 6.2-9 above, the PFT results for 5<sup>th</sup>, 7<sup>th</sup> and 9<sup>th</sup> graders in the Manteca Unified District, District between 2016-17 show that generally local children surpass the statewide averages in all testing areas with the exception of Aerobic Capacity and Body Composition.

## Sidewalks

In 2014, the City of Lathrop developed an ADA Self-Evaluation and Transition Plan to work towards fulfilling the requirements set forth in Title II of the Americans with Disabilities Act. To ensure environmental justice is achieved, disabled community members must have adequate access to public facilities. By meeting ADA sidewalk and facility requirements, a city can promote the physical fitness of all of its community members. The ADA states that a public entity must reasonably modify its policies, practices, or procedures to avoid discrimination against people with disabilities. The ADA Self-Evaluation and Transition Plan prepared by the City of Lathrop was developed to assess existing issues and promote policies that will reduce physical barriers to accessibility.

The City does not have a comprehensive inventory of pedestrian facilities such as sidewalks, street crossings, lighting, shade trees, or benches. Therefore, assessing the baseline for pedestrian facilities within the City is difficult. However, the City does identify priority areas for barrier removal in public facilities to increase accessibility and walkability for residents with disabilities. Table 6.2-10 identifies the barrier-removal priorities and schedule for barrier removal in public facilities. The City of Lathrop intends to review all listed barriers during the first year of the implementation of this plan and address those barriers that can be resolved through programmatic modifications.

**TABLE 6.2-10: CITY OF LATHROP WALKWAY BARRIER PRIORITIES**

<i>CITY OWNED FACILITIES</i>	<i>ADDRESS</i>	<i>YEAR</i>
Corporation Yard	2112 Louise Avenue	1-3
Police Services	15597 7th St	1-3
Community Center	15557 5th Street	7-9
Senior Center	15707 5th Street	7-9
Community/Valverde/Senior Ctr.	15707-57 5th Street	7-9
City Hall	390 Towne Centre Drive	10-12
<i>PARKS</i>	<i>ADDRESS</i>	<i>YEAR</i>
Libby Park	575 Libby Lane	1-3
Armstrong Park	230 Blue Sky Drive	1-3
River Park North	16001 S. Lathrop Road	1-3
Mossdale Park	700 Towne Centre Drive	4-6
Valverde Park	15557 5th Street	4-6
Park West	1630 Sheltered Cove Circle	4-6
The Green	16700 English Country Trail	4-6
Thomsen Basin	(400 block) Thomsen Road	4-6
River Park South (Dog Park)	17801 Inland Passage Way	7-9
The Commons	740 Green Plaza	7-9
Crescent Park	15980 Crescent Park Circle	7-9
Sangalong Park	13470 Slate Street	10-12
Woodfield Park	Cedar Ridge Cir. & Longbarn Dr.	10-12
Milestone Park	16165 Matador Way	10-12

SOURCE: CITY OF LATHROP ADA SELF-EVALUATION AND TRANSITION PLAN 2014.

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The City of Lathrop also completed a Public Right of Way (PROW) study identifying sidewalk hazards in 2013. More information on existing policies and action plans for improving ADA accessibility is available in the City of Lathrop 2014 Draft ADA Self-Evaluation and Transition Plan.

### Active Transportation Use

Active transportation is any form of transportation that is non-motorized. The use of active transportation during a daily commute increases physical activity levels. Increased physical activity has positive health benefits; including mortality risk reduction, disease prevention, cardiorespiratory fitness, and metabolic health.<sup>9</sup> Disadvantaged communities often have disproportionately poorer health outcomes. Increasing opportunities for active transportation within a City can improve the overall health outcomes of DACs.

Data from the 2017 California Department of Finance (DOF) Population and Housing Estimate Report and 2012-2016 American Community Survey (ACS) were utilized to illustrate journey to work (JTW) statistics for Lathrop. Table 6.2-11 provides an overview of Lathrop's JTW mode split data compared to countywide statistics for San Joaquin County and the State of California.

**TABLE 6.2-11: DEMOGRAPHIC AND JOURNEY TO WORK DATA**

	LATHROP		SAN JOAQUIN COUNTY		CALIFORNIA	
Population <sup>1</sup>	23,110		746,868		39,523,613	
Employed persons <sup>2</sup>	7,976		277,798		17,193,695	
MODE SPLIT	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE
Drove alone	6,090	76.4%	213,545	76.9%	12,636,396	73.5%
Carpooled	1,283	16.1%	39,951	14.4%	1,825,507	10.6%
Public transit	140	1.8%	3,966	1.4%	894,813	5.2%
Walked	45	0.6%	5,166	1.9%	463,369	2.7%
Bicycled	39	0.5%	1,493	0.5%	190,130	1.1%
Motorcycle	8	0.1%	681	0.2%	60,621	0.4%
Other	20	0.3%	2,090	0.8%	188,423	1.1%
Worked at home	351	4.4%	10,906	3.9%	934,436	5.4%

<sup>1</sup> POPULATION DATA OBTAINED FROM 2017 CALIFORNIA DEPARTMENT OF FINANCE POPULATION AND HOUSING ESTIMATE REPORT.

<sup>2</sup> EMPLOYMENT AND MODAL CHOICE DATA OBTAINED FROM 2012-2016 AMERICAN COMMUNITY SURVEY 5-YEAR ESTIMATES.

SOURCE: FEHR & PEERS, 2018.

The ACS reports that the majority of workers living in Lathrop, 76.4 percent, drove to work alone, whereas alternative modes of transportation accounted for approximately 19 percent of commute trips. Of the commute trips using alternative modes of transportation, only 0.6 percent of commuters reported walking to work and only 0.5 percent were reported bicycling to work. This data indicates that most commuters in Lathrop do not use active transportation as a means of getting to work. Approximately 92.6% of all trips made by Lathrop's employed residents are made by automobile or motorcycle (0.1%). Utilizing active transportation is an effective way of engaging in physical exercise and can be a factor in improving community health outcomes in disadvantaged communities. More details on active transportation use and bicycle facilities can be found in the *Public Facilities* section and Section 2.0 (Circulation).

### CIVIC AND COMMUNITY ENGAGEMENT

An important aspect of planning for environmental justice is the development of effective policies and programs that enable all residents to participate in local decision making. Disadvantaged communities can often be excluded from decision-making when officials and policies do not focus on involving these communities in a strategic manner. SB 1000 emphasizes that community engagement must be promoted



in a local jurisdiction through the development of objectives and policies that seek to involve members of DACs specifically. By involving and engaging DACs in decision-making processes, policy-makers can effectively meet the needs of these community members. Disadvantaged communities often have culturally-specific needs that must be made a priority within local policy to ensure community success. These needs are often distinct from those of the general population. The US EPA Environmental Justice Policy requires the "... meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." The establishment of appropriate opportunities for those who are low-income, minorities, and linguistically isolated to engage in local decision making will help ensure that environmental justice issues are identified and resolved. In addition, community programs that address the needs of disadvantaged communities are critical to ensuring environmental justice is achieved for these communities within a city.

Promoting civic engagement and programs for DACs is a mandated environmental justice focus area under SB 1000. As mentioned, all census tracts within the City of Lathrop are defined as CalEnviroScreen-designated Disadvantaged Communities (DACs). This section serves to assess the levels of civic engagement and existing community programs in the City of Lathrop given the presence of DACs across the City.

### **Levels of Civic Engagement**

At the local level, there were 334,253 total registered voters in San Joaquin County 15 days before the general election in 2016; 9,427 of these registered voters were from the City of Lathrop.<sup>21</sup> At the same time there were 14,426 people of voting age living within the City of Lathrop according to ACS 2012-2016 estimates.<sup>22</sup> This indicates that for one measure of voter participation, the participation rate for residents of voting age within the City of Lathrop was about 65%. It should be noted that not all residents of voting age are eligible to vote in the state of California.

According to the San Joaquin County Registrar of Voters, there were 9,427 registered voters in the City of Lathrop in 2016 and there 6,635 residents who voted in the General Municipal Election. This puts the voter turnout rate for the City of Lathrop at 70.4%. As for the year 2014, the General Municipal Election rate was only 37.6%.<sup>23</sup> It is expected that voter turnout rate drops significantly on years where there is no presidential election.

## **IMPROVEMENTS AND PROGRAMS**

### **DAC Programs**

A critical aspect of planning to achieve environmental justice is prioritizing projects and policies that directly benefit disadvantaged communities. As stated previously, in Lathrop, all areas within the General Plan Planning Area are designated as DACs, however, it is often the case that individual disadvantaged communities are not considered in regard to public investment decisions and new public programs. When disadvantaged communities are overlooked for public programs and investments, the specific needs of these communities are not met and the conditions in which they live often worsen. To promote

<sup>21</sup> California Secretary of State (2018). Voter Registration Statistics: 15 Day Report of Registration. Available at: <http://www.sos.ca.gov/elections/voter-registration/voter-registration-statistics/>

<sup>22</sup> U.S. Census Bureau; American Community Survey, 2012-2016 American Community Survey 5-Year Estimates, Retrieved from: <http://factfinder.census.gov> (6 September 2018).

<sup>23</sup> City of Lathrop Office of the City Clerk. Chronology of Elections. Accessed in September of 2017. Available At: [http://www.ci.lathrop.ca.us/cco/pdf/ChronologyofElections\\_July2018.pdf](http://www.ci.lathrop.ca.us/cco/pdf/ChronologyofElections_July2018.pdf)

## 6.0 ENVIRONMENTAL JUSTICE

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environmentally just planning, cities should incorporate programs and policies that are specific to the needs of DACs.

As describe previously in the regulatory setting, the Lathrop General Plan includes a variety of goals and policies to support disadvantaged communities and environmental justice issues through policies aimed at improving the transportation network to accommodate bicycle and pedestrian travel, supplying the city residents with high quality parks, recreation opportunities, community services and facilities, improving housing conditions and affordability, and promoting air and water quality throughout the planning area.

As previously mentioned, the City of Lathrop developed an ADA Self-Evaluation and Transition Plan in 2014 to work towards fulfilling the requirements set forth in Title II of the Americans with Disabilities Act. The City has put extensive efforts into ensuring they meet ADA requirements and that mobility and accessibility are promoted for disabled residents.

To promote housing maintenance and affordability for low income residents, The City established the GAP Loan Program Downpayment Assistance Program that provides deferred downpayment assistance loans to low income, first time homebuyers, looking to purchase homes in the City of Lathrop.<sup>24</sup> Additionally, San Joaquin County offers similar loan and housing cost assistance programs for low income residents.

Furthermore, the City of Lathrop's 2015 Housing Element includes housing policies that are focused on supporting the efforts of the San Joaquin Housing Authority in its administration of Section 8/Housing Choice vouchers, public housing, and farmworker housing. The updated housing element also includes policies to promote the construction of housing that is affordable to all income levels and policies to ensure healthy and safe housing, such as addressing the presence of toxic building materials. The City has taken a proactive approach within the Housing Element to ensure the safety and sanitation of housing for its residents.

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<sup>24</sup> City of Lathrop Community Development Department. 2016. Gap Down Payment Assistance Program. Available At: <http://www.ci.lathrop.ca.us/cdd/pdf/Down%20Payment%20Assistance%20Program.pdf>

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CITY OF LATHROP GENERAL PLAN UPDATE

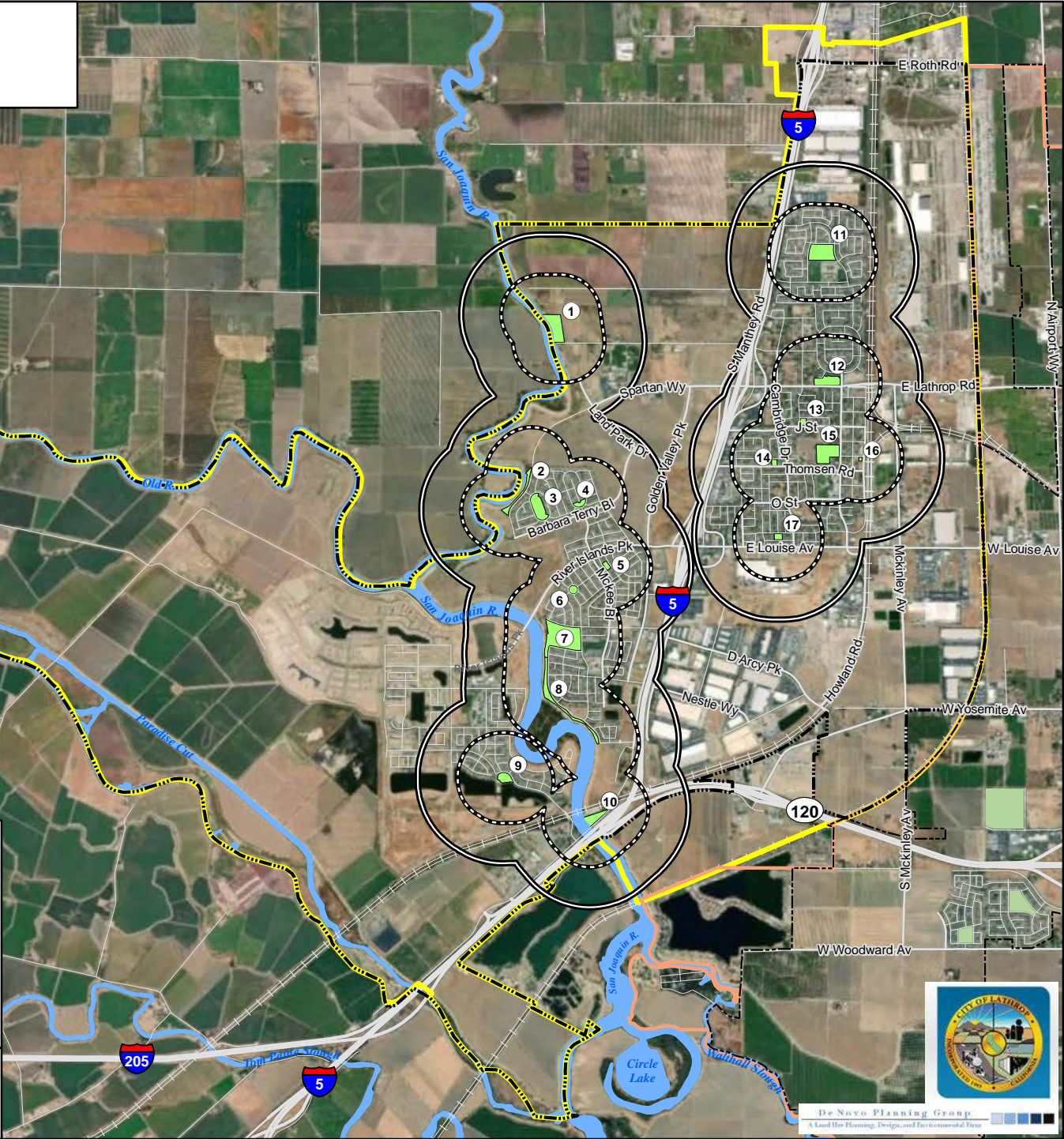
Figure 6.2-1. Park Buffer Zones

Map ID	Park Name	Acres
1	Dos Reis Regional Park	8.93
2	River Park North	3.23
3	Park West	6.79
4	Crescent Park	1.43
5	The Green	1.02
6	Mossdale Commons	1.45
7	Mossdale Landing Community Park	20.38
8	River Park South	7.42
9	Michael Vega Park	2.94
10	Mossdale Crossing Park	4.05
11	Apolinar Sangalang	9.74
12	Woodfield Park	5.53
13	Milestone Park	1.00
14	Thomsen Park	0.83
15	Valverde Park	9.11
16	Lathrop Skate Park	0.29
17	Libby Park	1.19

**Legend**

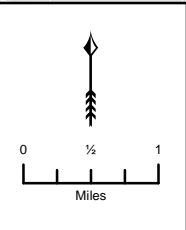
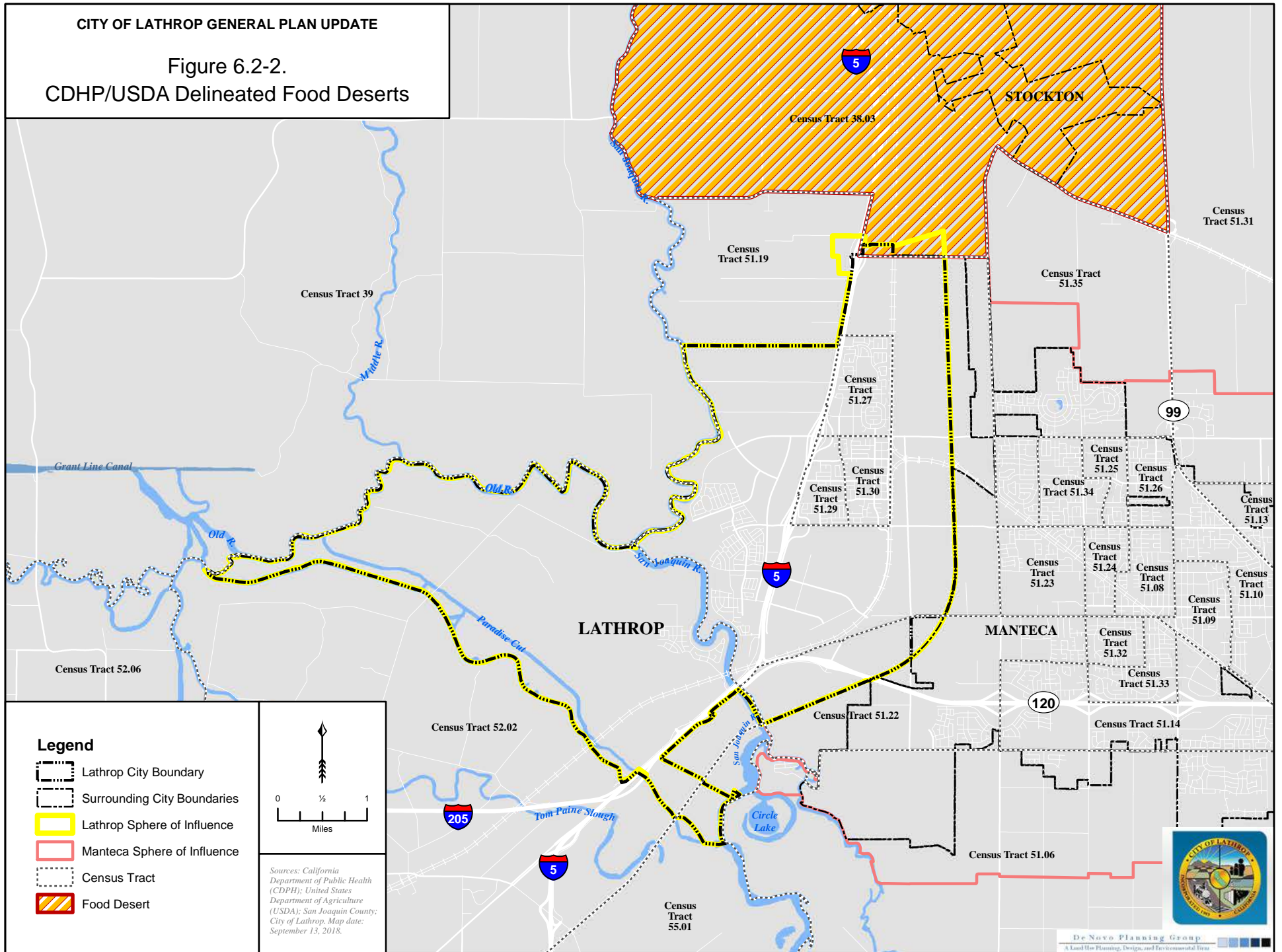
- Lathrop City Boundary
- Manteca City Boundary
- Lathrop Sphere of Influence
- Manteca Sphere of Influence
- Assessor Parcel Boundary
- Public Park
- Quarter-Mile Buffer of Parks
- Half-Mile Buffer of Parks

Sources: San Joaquin County; City of Lathrop; ArcGIS Online World Imagery Map Service. Map date: September 14, 2018.



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Figure 6.2-2.  
CDHP/USDA Delineated Food Deserts



Sources: California Department of Public Health (CDPH); United States Department of Agriculture (USDA); San Joaquin County; City of Lathrop. Map date: September 13, 2018.



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